

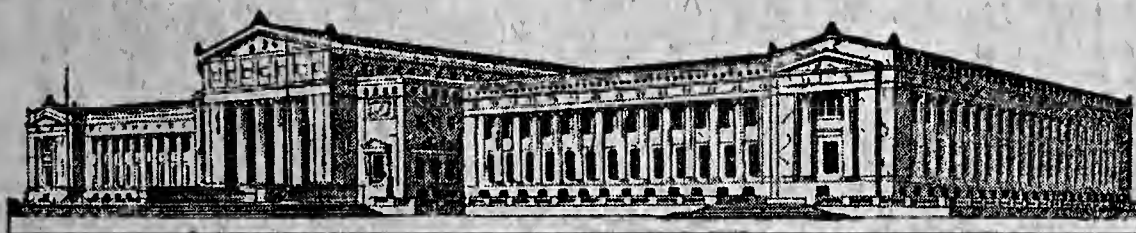
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# FIELD MUSEUM OF NATURAL HISTORY



# HANDBOOK

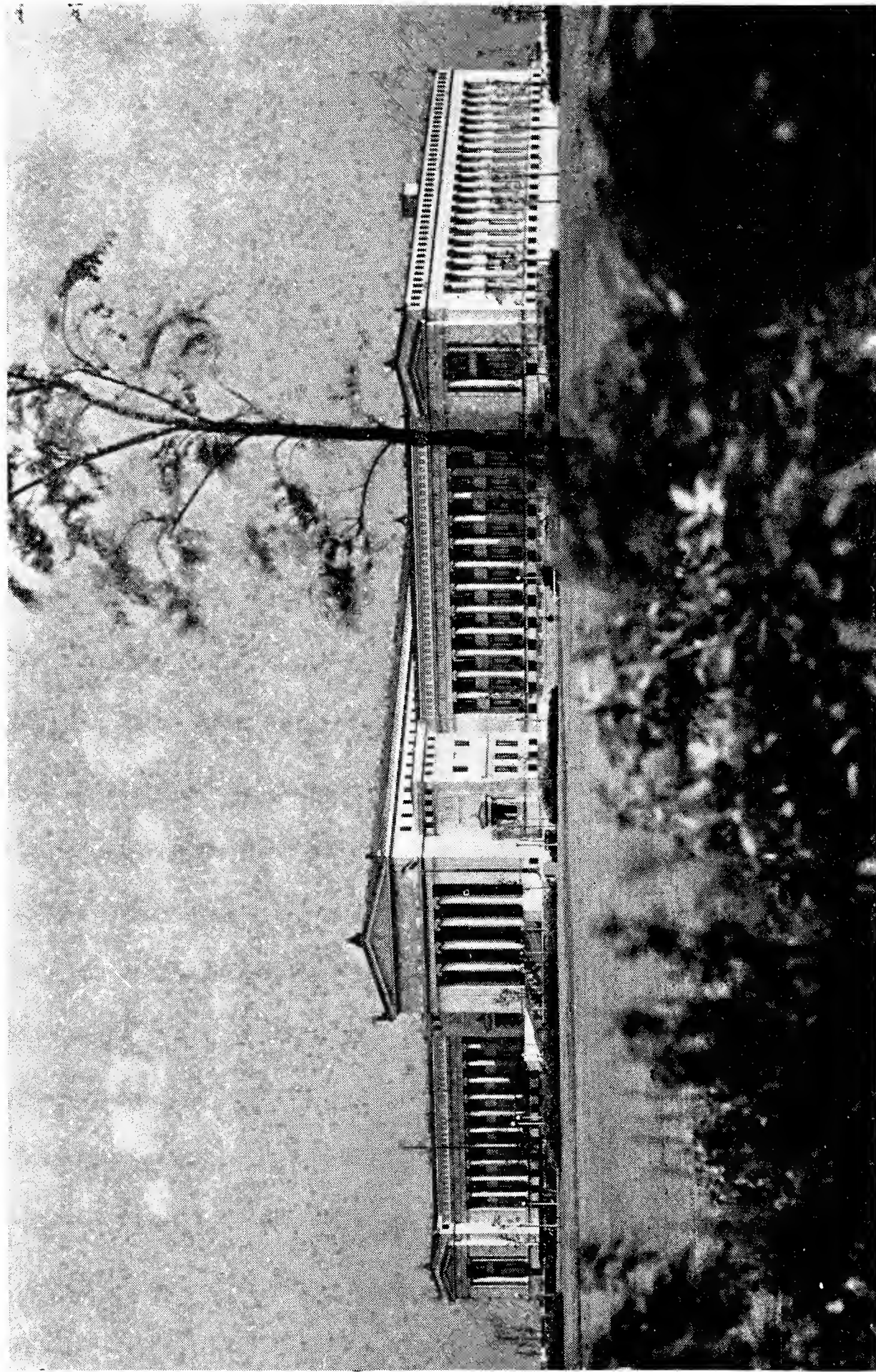
INFORMATION CONCERNING THE MUSEUM—  
ITS HISTORY, BUILDING, EXHIBITS,  
EXPEDITIONS, ENDOWMENTS,  
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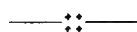


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FIELD MUSEUM OF NATURAL HISTORY

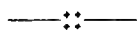
Roosevelt Road and Field Drive, Chicago

FIELD MUSEUM  
OF  
NATURAL HISTORY



HANDBOOK

INFORMATION CONCERNING THE MUSEUM—  
ITS HISTORY, BUILDING, EXHIBITS,  
EXPEDITIONS, ENDOWMENTS,  
AND ACTIVITIES



TENTH EDITION

CHICAGO, U. S. A.

JULY, 1941

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Bequests to Field Museum of Natural History may be made in securities, money, books, or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

### FORM OF BEQUEST

I do hereby give and bequeath to Field Museum of Natural History of the City of Chicago, State of Illinois, \_\_\_\_\_

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*Cash contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15 per cent of the taxpayer's net income are allowable as deductions in computing net income for federal income tax purposes.*

*Endowments may be made to the Museum with the provision that an annuity be paid to the patron during his or her lifetime. These annuities are guaranteed against fluctuation in amount and may reduce federal income taxes.*

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## FOREWORD

This Handbook is designed to give briefly general information concerning Field Museum of Natural History—its founding and its present organization, the building in which it is housed, its exhibits, expeditions and various activities, its endowments, and many other matters concerning which inquiries are constantly received.

Although this Handbook contains information regarding the Museum's exhibits, it is in no sense a guidebook. Persons desiring detailed information about the collections and their locations in the various exhibition halls are referred to other publications of the Museum—the General Guide which covers all the exhibits, and the series of special handbooks covering certain divisions of the exhibits in greater detail. A list of special Handbooks appears on page 77 of this Handbook; a list of Leaflets on scientific subjects will be found beginning on page 73; a list of technical scientific publications may be had upon application.

The Museum, dedicated to the causes of education and the advancement of science, is operated by a Board of Trustees for the benefit of the people of Chicago and visitors to the city. It is the purpose of this Handbook to give the public a clearer conception of what has been accomplished and what is being done by the Museum; what it has to offer as a source of both culture and recreation; and how the institution is operated and maintained. It is the aim of the Board of Trustees, and of the Staff, to maintain the high standards of the Museum, and to develop the institution more and more as an important educational center.

CLIFFORD C. GREGG, *Director*

JULY, 1941

# FIELD MUSEUM OF NATURAL HISTORY

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## PURPOSE AND SCOPE

It is the primary mission of Field Museum of Natural History to disseminate knowledge of the world in which we live to all classes of people. Thus it may be regarded as a people's university for the promotion of education and the increase of culture.

The Museum's scope embraces practically all the principal manifestations of Nature, covering as it does both animate and inanimate phenomena. Its exhibits and study collections are devoted to the four main branches of natural science: Anthropology, or the study of Man and his modes of life; Botany, or the study of the Plant Kingdom; Geology, or the study of the materials, structure and history of the earth and its life from earliest times; and Zoology, or the study of the Animal Kingdom.

The Museum accomplishes its main object—education—by presenting knowledge in its most fascinating forms, and by employing methods which are graphic and vivid, leaving a lasting impression on any receptive mind. It maintains the highest standards of scientific accuracy, but avoids dullness and pedantry in the presentation of its subjects.

Material for both child and adult education is provided by Field Museum. It enables the casual visitor to obtain the rudiments of a subject quickly, and it also provides facilities for the most advanced scholar to penetrate to the depths of a problem. It makes available materials and opportunities to satisfy the demands of the student and teacher of the sciences in secondary schools and

colleges. It also directs much of its effort to reaching the grade-school children during their most impressionable years. It contains a wealth of exhibits and information of an economic character, study of which is valuable to the business man, the industrial leader, the manufacturer, the professional man, the tradesman, the artisan, the worker with hand or brain, the "average man on the street"—valuable often in a practical way in their respective activities. It is further a mine of inspirational material for the writer, the painter, the sculptor, the designer, and workers in all artistic fields, providing a source of ideas and suggestive material, "local color," and information.

A natural supplement to the dissemination of knowledge is the discovery of new knowledge. The expeditions and research work conducted by the Museum staff result not only in bringing in material which has been deliberately sought because of its known value and significance, but also in finding many hitherto unknown facts. Thus the Museum contributes to the advancement of scientific knowledge, as well as to the spreading of information on known subjects.

## FOUNDATION AND EARLY DEVELOPMENT

Field Museum was founded in 1893 by the late Marshall Field. For some years previous there had been a cultural awakening in Chicago, and the beginning of a realization that the city needed better provisions for education, science, art, and urban beautification. One of the needs felt for a long time was a great museum to provide proper facilities for popular education along scientific lines.

In 1891 definite preliminary steps were taken with the formation of the Columbian Historical Association, which directed its efforts toward the establishment of such a museum. The preparations for and the holding of the World's Columbian Exposition (first Chicago World's

Fair) in 1893 gave great impetus to the museum project. Consequently the directors of the exposition appointed a committee to organize a body of representative citizens interested in establishing a museum which would make permanent some of the more important World's Fair exhibits. This resulted in the formation, on August 21, 1893, of the Columbian Museum of Chicago. Application for incorporation was made, with sixty-five leading citizens as incorporators and fifteen as trustees. A charter was granted on September 16, 1893.

Officials of the exposition solicited and procured for the Museum gifts and transfers of desirable exhibits from many of the World's Fair exhibitors, thus rapidly accumulating a nucleus of material. Some 1,100 holders of exposition stock aided the movement by donating shares totaling \$1,500,000 in par value, which netted the Museum approximately \$195,000.

But, as collections were zealously acquired and accumulated in large amount, it soon became apparent that an adequate endowment to insure permanence to the institution had not yet been obtained. It was shortly afterwards, on October 26, 1893, that Marshall Field made his foundation gift of \$1,000,000 to the Museum. The announcement of this gift assured the success and permanence of a great museum.

Other contributors promptly appeared. Messrs. George M. Pullman and Harlow N. Higinbotham each subscribed \$100,000, and Mrs. Mary D. Sturges gave \$50,000. Among other donors of funds were the McCormick Estate, P. D. Armour, Martin A. Ryerson, R. T. Crane, A. A. Sprague, and many other leading citizens. Nearly \$500,000 more had been received by the end of the following year.

Several valuable collections were soon purchased, and numerous gifts of exhibition material were received. The first notable contribution of this character was that of

the late Edward E. Ayer, who presented his anthropological collection valued at more than \$100,000.

The Palace of Art in Jackson Park, most beautiful of the buildings of the 1893 fair, was secured as a temporary home for the Museum. This building housed the Museum for the twenty-seven years which elapsed before the opening of the present structure in Grant Park at Roosevelt Road and Lake Michigan.

On January 22, 1894, the Board of Trustees formed a permanent organization. Edward E. Ayer was chosen as the first President, and Frederick J. V. Skiff, who had been an official of the exposition, was appointed Director of the Museum. Organization of the scientific staff and installation of the exhibition material which had been gathered was then begun.

On May 21, 1894, the Trustees changed the name of the institution to Field Columbian Museum in recognition of the foundation gift of Marshall Field.

The doors of the Museum were opened to the public for the first time on June 2, 1894, with Marshall Field as guest of honor at appropriate dedication ceremonies.

In 1905 the Board of Trustees again changed the name of the institution to that which it bears at present—Field Museum of Natural History.

Marshall Field's interest in and contributions to the Museum continued until his death, in 1906, when he left the institution a bequest of \$8,000,000, one-half of which, under the terms of his will, was allotted toward endowment, and one-half toward the cost of erecting a new building to house the Museum permanently. This legacy, with his gifts during his life, brought Marshall Field's total contributions up to more than \$9,430,000.

## THE MUSEUM BUILDING

Since its establishment in 1893, Field Museum of Natural History has risen to its present position as one of

the four or five greatest scientific museums of the world. It is housed in a magnificent building which is one of the outstanding architectural masterpieces of Chicago.

The site of the present building, in Grant Park at Roosevelt Road and Field Drive, was provided by the South Park Commission (now merged into the Chicago Park District). This location makes the Museum accessible from all parts of the city. Construction of this building was begun in 1915 and completed in 1920. There followed the stupendous task of transferring the vast accumulation of exhibits and other material from the old building in Jackson Park to the new edifice. Considering the magnitude of this work it was completed rapidly, and the prompt reinstallation of the exhibits in the new building made possible its formal opening to the public on May 2, 1921.

This building, erected at a cost of more than \$7,000,000, is a beautiful structure of white Georgia marble, strikingly massive in its proportions, and an unusually fine example of adaptation of classic design to modern ideas. The main architectural motifs were inspired by the Erechtheum,<sup>1</sup> one of the temples of the noted Acropolis group in Athens, generally recognized as the finest example of the Ionic order which has been preserved from ancient times.

D. H. Burnham and Company, headed by the late Daniel H. Burnham, designed this monumental building, following closely the general lines of the ancient Athenian pile. After the death of Mr. Burnham, the task was carried on by the architectural firm of Graham, Anderson, Probst and White.

<sup>1</sup>The Erechtheum combined the sanctuaries of Erechtheus and Athena Polias, and it stands upon the spot where, according to Greek mythology, the contest for the possession of Athens between Athena and Poseidon took place. After the burning of the original building by the Persians in 480 B.C., the rebuilding of the structure was begun, and is supposed to have been completed about 407 B.C. The temple is especially famed as an example of the decorative use of caryatids.

The Museum building is 706 feet long, 438 feet wide, and 104 feet high. There is a large pedimented central pavilion, to the east and west of which run long wings. Each wing has a complete series of Ionic columns extending throughout its length to the point where it is terminated in a smaller pavilion.

The building stands in the center of a park area to the north of Soldier Field. It may be reached by both the inner and outer boulevards in Grant Park. Motor buses run directly to the door. The location is convenient also to Illinois Central Railroad suburban trains, surface lines, street cars, elevated railroads, and electric interurban lines. Adequate free space for parking of automobiles is available at the Museum.

The Museum is surrounded by an attractive terrace, sixty feet wide, which rises six feet above the ground. This terrace has a retaining wall, steps, and balustrade of the same marble as the building proper. The main entrance, at the central doorway on the north side of the building, is reached by a wide flight of steps. Other entrances are provided on the west and south sides of the building.

The interior of the Museum building consists of a great central hall or nave, with transverse exhibition halls running off from both sides of it; these halls are again connected by others at either end of the building running parallel to the nave. Except for the central hall, which extends the full height of the building, the structure is divided into floors. The ground floor and the first two floors above it are devoted chiefly to exhibition halls, while the third floor and the clerestories are used for the offices of the scientific staff and for the laboratories and workshops necessary for the Museum's operations. The exhibition space amounts to approximately 550,000 square feet; the total floor area to nearly 680,000 square feet.

The central hall, which is dedicated to Mr. Stanley Field, President of the Museum since 1909, contains four



statues by Henry Hering which symbolize the purposes of the Museum and blend with the architectural treatment of the hall. Flanking the north archway are figures representing "Natural Science" and "Dissemination of Knowledge," while at the south archway are figures emblematic of "Research" and "Record."

A notable feature of the building is the James Simpson Theatre which occupies a part of the ground floor. This auditorium was built with funds provided by Mr. James Simpson, a Trustee and Vice-President of the institution. The architectural treatment of the theatre is Greek in character, harmonizing with the rest of the Museum building. It has a seating capacity of more than 1,100 persons, and is used chiefly for lectures on science and travel, which are given periodically for the general public, and for educational entertainments for children. There is also a smaller lecture hall, seating 250 persons, which is used for various meetings, particularly those of scientific societies or educational organizations.

## HOW THE MUSEUM PERFORMS ITS MISSION

To perform its mission of disseminating knowledge in the natural sciences, Field Museum of Natural History demands the highest standards of accuracy in its exhibits. No effort is spared to make the exhibits authentic, and at the same time attractive in presentation of their subjects. Most of the exhibits are prepared from material gathered from far and near by collectors who are highly qualified specialists in their respective branches of the natural sciences.

Exhibits are constantly being added to and improved. Scientific expeditions are frequently dispatched to distant parts of the world for the collection of additional material. Often from twelve to fourteen expeditions have been in operation simultaneously, and the Museum has had

as many as eighteen expeditions at work in one year. In addition to collecting material for exhibition, these expeditions often make scientific discoveries of great importance. The results of such expeditionary work, as well as new scientific knowledge obtained through the researches conducted within the walls of the building by members of the Museum staff and others, are given forth in publications issued by the institution and circulated internationally.

The educational influence of the Museum reaches people of all classes and ages. More than one million visitors now view the exhibits at the Museum during the course of an average year—in 1933 there were 3,269,390 visitors, a world's record for any museum. In addition to the vast public reached by the Museum's exhibits, lectures and publications, the institution's influence is extended to many additional millions each year through its policy of utilizing all worth while opportunities which are presented for the further spreading of its messages, such as accounts in the press, radio lectures, and motion pictures.

## THE EXHIBITS

While each of these additional activities has its function, the exhibits themselves remain, of course, the outstanding factor in fulfilling the purposes of the Museum. The collections now housed in the Museum are vast in extent, and include many which are the finest of their kind in the world. Chiefly gathered as the result of many expeditions, but including also countless things obtained through gifts made by friends of the institution and through purchases and exchanges, the collections include great amounts of material which never could be duplicated. Priceless because irreplaceable, an approximation of their value may nevertheless be attempted in concrete figures. In the last inventory taken a value of more than \$48,000,000 was indicated for the Museum's collections,

not including the value of the building, which cost more than \$7,000,000.

The exhibits are grouped into four Departments—Anthropology, Botany, Geology, and Zoology. The collections in each Department are arranged systematically under their respective divisions and subdivisions. Explanatory labels containing brief but salient information are attached to exhibits for the convenience of visitors. So closely have the best practices been adhered to in the preparation of exhibits that today the Museum is noted for exactness and purity of method, and the material exhibited is becoming more and more appreciated for its attractiveness, co-ordination, high educational value, and economic usefulness.

#### STANLEY FIELD HALL

In Stanley Field Hall, which is the first to be entered by the visitor coming in at the main (north) or the south entrance, the collections stand apart from the systematic departmental collections. This hall contains representative exhibits from each Department, the aim being to give an introductory view of the four sciences which come within the institution's scope.

The hall is dominated by a group of African elephants mounted in fighting attitude. This famous group is a masterpiece of taxidermy executed by the late Carl E. Akeley, noted explorer, naturalist, and sculptor. It stands, in the center of the hall, where it commands the instantaneous attention of everyone who enters. Near-by are three fine bronze groups, also by Akeley, illustrating lion spearing as carried on by African natives. Ranged along the sides of the hall are cases of typical anthropological, botanical, geological, and zoological material, making it possible for the visitor to obtain a glimpse of the activities of the Museum in general. These exhibits are changed from time to time to show new acquisitions or the results of recent expeditions. At the south end of the hall are

shown a few typical traveling exhibition cases of the type circulated in the schools by the Department of the N. W. Harris Public School Extension of Field Museum (p. 58).

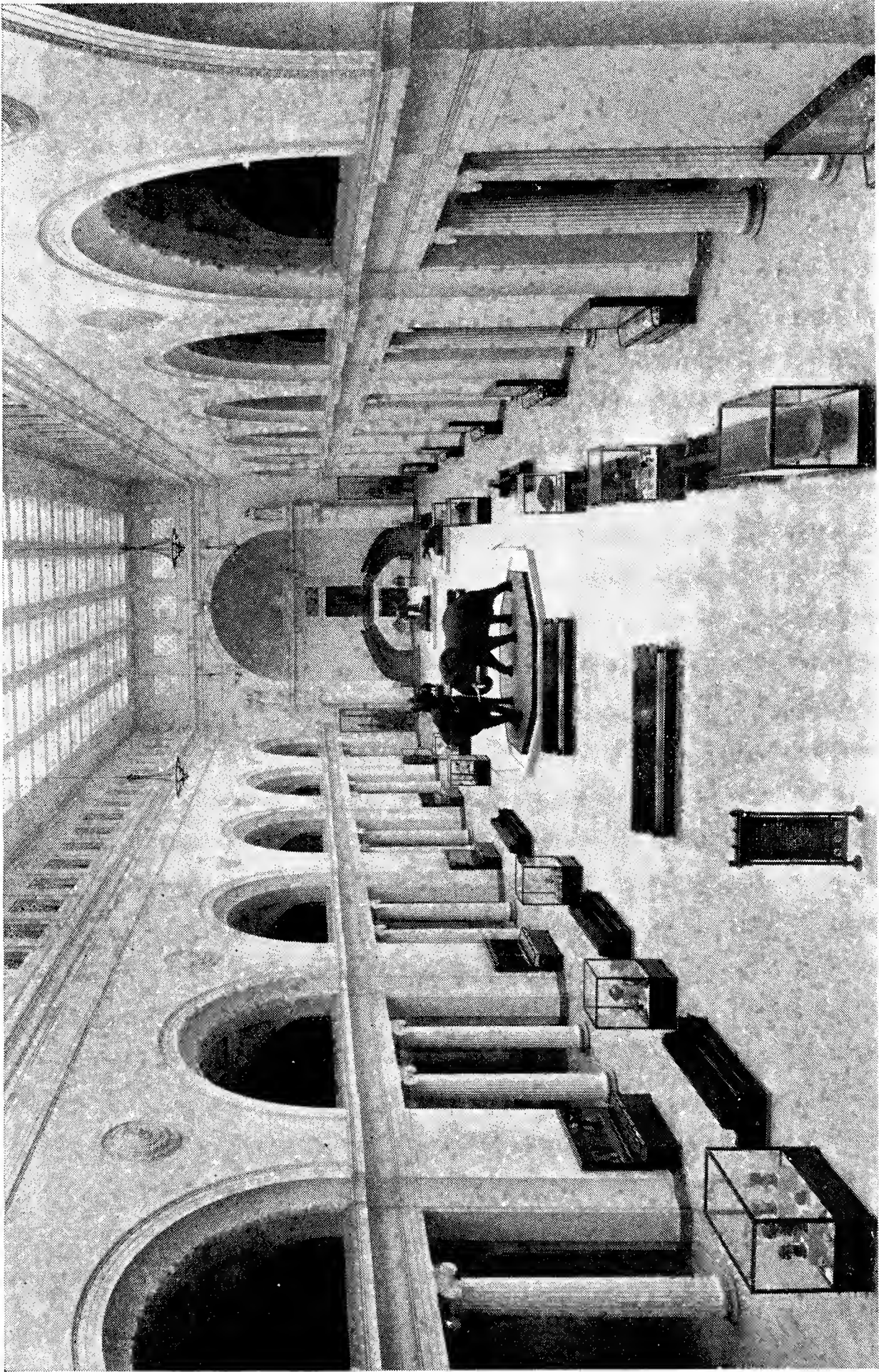
## ANTHROPOLOGY

The Department of Anthropology occupies the first floor of the east wing adjoining Stanley Field Hall, more than half of the ground floor, and the second floor galleries overlooking Stanley Field Hall. In this Department the subject of human life is dealt with—all races of mankind in all ages, prehistoric, historic, and modern. Here are revealed the known facts about our primitive ancestors in earliest times when man was just emerging from the level of the animals; about ancient civilizations whose influence still pervades to a greater or less extent the foundations of our political, social, and religious organization today; and about contemporary peoples whose development and culture are radically different from our own.

Few sciences are so absorbingly interesting as anthropology. The various races have not advanced uniformly in culture, but even the most backward challenge our admiration by the skill with which they have met and solved the problems presented by their environment.

Primitive peoples stand out as mileposts on the road which we ourselves have traveled. A study of the remains of the civilizations which flourished in Egypt and Mesopotamia when our own ancestors were skin-clad barbarians just emerging from the Stone Age, cannot fail to broaden our outlook and increase our sympathy for mankind. The exhibits in this Department are designed to show the achievements in arts and industries, as well as the social and religious life of the world outside of modern Europe and America, in both historic and prehistoric times.

About one-third of a large exhibition hall is devoted to the Eskimo, a people whose artifacts bear a curious resemblance to those of the races which lived in Europe at the close of the glacial period. The life of the Eskimo



STANLEY FIELD HALL

The central exhibition hall of Field Museum, dedicated to the institution's President, Mr. Stanley Field





centers about the hunting of sea animals, and the proper note is at once struck by a life-size model of a hunter seated in his frail but buoyant kayak, with his harpoon ready to strike. His boat, his costume, and the paraphernalia placed before him on the miniature deck, have all been in actual use. Additional groups illustrate other features of Eskimo life. A girl is shown fishing through a hole in the ice, a man is laboriously drilling ivory, and a woman is dressing a hide. A large group shows the return of a family from a winter hunt, with a seal on a sled drawn by dogs.

Other exhibits in the same hall illustrate the life of the Indians of the Northwest Coast. These tribes developed a high culture centering about salmon-catching and the use of cedar. Their bizarre art, with its use of highly conventionalized animal forms, finds expression in carved and painted weapons, tools, and utensils. Chilkat blankets are of special interest as showing the way in which their artistic concepts, first developed in connection with wood carving and painting, were applied to textiles. Three large totem poles are displayed in the hall, and there is an avenue of imposing house-posts and grave-posts along one side.

Collections illustrating the life of the Indian tribes of the Eastern Woodlands occupy a hall by themselves, James Nelson and Anna Louise Raymond Hall. Miniature groups showing the summer and winter life of the Sauk and Fox are of particular interest to Chicagoans, for villages of the same type existed within the present city limits only two hundred years ago. Collections from the Potawatomi, who formerly inhabited the Chicago region, likewise form a chapter in the early history of Illinois. Also exhibited in this hall is a collection of rare material representing the Naskapi tribes of Labrador.

Another hall, Mary D. Sturges Hall, is devoted to the Plains tribes, the typical Indians of romance. Exhibits in

this hall are designed to give a synoptic view of the arts, industries, and religious practices of the Cheyenne and Arapaho, selected as typical of this area. Among the less typical groups the Pawnee are especially noteworthy. The Pawnee exhibits include a complete set of objects used in the Calumet ceremony and several sacred bundles, while the principal religious ceremonies of the tribe are reproduced in four miniature groups.

Collections relating to the California tribes include extensive exhibits of basketry and other rare and interesting material. The arts and industries of the nomadic tribes of the southwestern United States are illustrated by a miniature Navaho group and a noteworthy collection of Navaho blankets.

All the American Indians were intensely religious, but there was no area in which ceremonialism was more highly developed than among the settled agricultural tribes of New Mexico and Arizona. Their culture is represented in the extensive Stanley McCormick Collection. These people live in an arid region, and they pray constantly for rain. They believe in a multitude of gods who are impersonated in their ceremonies by masked dancers. To familiarize their children with these gods, they make small, grotesquely painted wooden figures which should be classed rather as dolls than as idols. During the winter season there is a long series of ceremonies, for it is thought that the gods are then actually in the villages, and each ceremony has its characteristic altar. Many of these altars have been reproduced in the exhibits. The daily life of the Hopi is illustrated by a life-size group in the interior of a house where women are seen grinding corn, making bread, and fashioning pottery, while a man is weaving a blanket.

The Hall of the Archaeology of the New World (Hall B), is temporarily closed in order to prepare it for new exhibits which will give the visitor a synoptic view



of the ancient civilizations of the New World. The accomplishments of the peoples of each main geographical area will be shown in relation to those of other areas. The purpose of the hall will be to emphasize the general rather than the specific—to present some basic knowledge of New World archaeology. From Hall B, the visitor can then go to the other Indian exhibits with a framework of knowledge which will give him greater insight and pleasure.

There will be three sections in this hall:

- I. The New World civilizations as the white man found them.
- II. The New World civilizations as they were in the millennia preceding Columbus. This will show the main accomplishments of the ancient Peruvians, Mayas, Aztecs, Pueblos, as well as the civilization of the Indians of the Mississippi Valley.
- III. New World methods of manufacture of stone, bone, and metal tools, and of pottery, baskets, houses, and clothing.

The newest museum exhibition methods, with improved cases, lighting, and installation, as well as recently developed techniques in presentation of ideas, will be employed in this hall. Dioramas or scale models, and colorful paintings, will vivify the exhibits so that any layman will grasp their meaning at a glance.

Collections illustrating the past history and the present customs of the natives of Mexico and Central America fill one hall. In the millennium preceding the arrival of Columbus there developed in this area America's most remarkable civilization—that of the Mayas. With their great intellectual achievements, their artistic skill, and their city-state organization, the Mayas have been called “the Greeks of the New World.” The Aztecs, with their powers of political and military organization, their vast empire, and their borrowed arts and sciences, have

similarly been compared to the Romans. Collections representing these two cultures, as well as those of the Toltecs who preceded the Aztecs in the Valley of Mexico, and allied civilizations of ancient Mexico, fill more than half the hall. Ethnological collections illustrate the daily life of the modern representatives of these tribes, and many points of contact with their life of a thousand years ago are apparent. The brilliantly embroidered garments which are worn by these modern Indians add a note of bright color to the more somber tones of the ancient objects.

South America is a continent of contrasts—of juxtaposed snow-clad peaks and tropical jungles, of civilized nations on whose fringes live savage tribes in a Stone Age stage of development. The Museum's collections representative of South America are dominated by the attractive culture of ancient Peru. Textiles excavated from the sandy shores of Peru, and pottery in every conceivable shape, decorated with designs in color, testify to the wealth of these ancient civilizations. Shrunk human heads from the Jivaro Indians of the Amazon Basin mark the other end of the scale of human progress. Man in this area has called on the animal kingdom to help him in his adornment, and the collections include many ornaments and head-dresses made from the brilliant plumage of tropical birds. Gold ornaments from Colombia and finely worked bone implements from Chile and Argentina attest the wide range of ancient American civilizations.

The Etruscan and Roman antiquities, exhibited in Edward E. and Emma B. Ayer Hall, are of great variety. Truly worthy of admiration are the simple, strong, and yet highly artistic and utilitarian qualities of many of the objects. The Roman bronzes, and the Etruscan sarcophagi and funerary couch merit special attention, while the Roman wall paintings are unique among American collections. A fine collection of antique glass is exhibited.



*Photograph copyright Field Museum of Natural History*

#### A NEANDERTHAL FAMILY

Life-size restoration of prehistoric people who lived about 50,000 years ago, with a reproduction of a rock shelter at Gibraltar.  
This group is one of a series in the Hall of the Stone Age of the Old World.



The Museum has important Egyptian and Babylonian collections, making it possible to study the remains of these civilizations which contributed so much to the development of our own. Persistence of the personality after death was the chief tenet of the religion of the Egyptians, and we owe most of our knowledge of their daily life to the efforts they made to provide for their future welfare. Mummies and mummy coffins are displayed in a long wall case, permitting one to study burial practices from earliest times down to the Greco-Roman period. Animals as well as human beings were mummified. That the mummifiers were not always honest is shown by X-ray photographs made in the Museum's roentgenological laboratory which reveal cases of substitution of improper bones, or foreign materials, for parts of the bodies. A small chamber at the west end of the hall contains an X-ray apparatus and a mummy. Here the Museum visitor may press a button and see an actual size skeletal image of the mummy projected upon a fluoroscopic screen. Two mastaba tombs are installed as found in their original setting. There is an ancient mortuary boat of cedar wood, which in the days of Sesostriis III conveyed the dead across the Nile from Darfur to "their last resting place."

The Hall of Babylonian Archaeology contains material from Kish and Jemdet Nasr, ancient cities excavated by the Field Museum-Oxford University Joint Expedition to Mesopotamia. The cultural development of Babylonia is represented from the fourth millenium B.C. to the fourth century A.D. At one end of the hall is a gateway of the Sasanid period with stucco decoration. Among the exhibits of general interest are chariot wheels and rein rings, building materials, and cuneiform writing on clay tablets. The walls of the hall are decorated with enlarged cylinder and stamp seal impressions representing the major periods in Near Eastern glyptic art.

In the African hall the life-size figures of medicine-men, exceedingly grotesque in appearance, strike the

keynote of African life, which centers around magical rites from the cradle to the grave. There are no limits to the power of the magician, who is credited with the ability to make rain, foretell the future, and cure the sick. The Negro is musical, and his productions are thought to be the forerunner of certain of our own types of popular music. His musical instruments, as shown in the Museum's collection, are of great variety and ingenuity, varying in size from large wooden drums to small reed pipes. Warfare is illustrated in the exhibits by many types of weapons, including bows with their poisoned arrows, elaborately barbed spears, and body armor of crocodile skin. In some parts of Cameroon the medicine-man is the only person allowed to mix the arrow poison. He retires to the bush to mix his poisonous brew. In the year 1897 a small British force captured the city of Benin, long famous for its ivory carving and bronze casting. Two cases in this hall contain objects brought from Benin at the time of this punitive expedition.

Other halls contain extensive ethnological collections from Madagascar, Polynesia, Micronesia, the Malay Archipelago, the Philippines, Melanesia, and Australia. The Madagascar collection is the only one of importance in the United States, and is rich in beautiful silver jewelry, wood carvings, and textiles of silk and raffia. Prominent among exhibits from New Zealand is a council house of the Maori. It is the only one in America, and one of the last remaining six in existence. Life-size figures of a pygmy fire maker, and a life-size Dyak hunter of Borneo, are prominent attractions in the Arthur B. Jones Collection.

One hall contains the Robert F. Cummings Collection from the Philippines. Life-size groups illustrate Igorot iron working and pottery making as well as Bagobo weaving, while two attractive miniature groups show the daily life in an Igorot and a Tinguian village.

Joseph N. Field Hall contains comprehensive collections from the Melanesian islands of the South Pacific.



The peoples of that area are melting away before the advance of civilization, and within a few years their old life will be only a memory. Their curious weapons and fantastic masks fire the imagination, while their rich and varied art provides a veritable mine for the designer in search of new ideas. The darker side of their life is portrayed by the preserved heads of their enemies and the remains of a cannibal feast.

More familiar to most Americans are the Chinese people. A visit to the galleries on the second floor, overlooking all sides of Stanley Field Hall, will delight all who admire Chinese products and works of art in their many aspects.

The Blackstone Expedition of 1908-10, with the late Dr. Berthold Laufer, former Curator of Anthropology, at its head, penetrated far into the forbidden land of Tibet, and returned with treasures from that country as well as from China, which are now on exhibition in two halls on the second floor. The costumes and strange masks which Tibetans use in religious dances to cast out demons, and Chinese stage scenes and costumed figures of actors are among the many things displayed. In George T. and Frances Gaylord Smith Hall there are extensive exhibits of ancient Chinese stone implements, bronzes, cast iron, mortuary pottery, clay figures, porcelain, and wood carvings, and a collection of provincial sculpture that is unique in its scope. One room is devoted to a remarkable collection of jade objects from China.

Other parts of the Orient are the subject of ethnological collections which fill another hall, located on the ground floor. Included are exhibits pertaining to Korea, Siberia, India, Burma, Siam, Ceylon, and the Andaman and Nicobar islands. The Ainu, a nearly extinct people of Hokkaido (Yezo), Japan, are well represented.

A unique departure from usual museum practice is presented in Chauncey Keep Memorial Hall, which con-

tains a series of racial portraits in bronze and stone by the sculptor Malvina Hoffman, many of full length as well as busts and heads. Colored transparencies representing various racial types supplement the sculptures. Complementing this hall which illustrates the living races of mankind, the Hall of the Stone Age of the Old World takes us back into the dim past of mankind and shows in eight groups, prepared by another sculptor, Frederick Blaschke, the development of prehistoric man, beginning with the Chellean period about 250,000 years ago and terminating with the dawn of history about 3700 B.C. An exhibit called "The Ancestry of Man" shows the relations between mankind and the other primates, and particularly the inter-relationship of various extinct and living races of the human family.

The above brief account of a few items in the Department of Anthropology is intended merely to give a general view and to indicate the value and interest of the exhibits. When it is stated that the number of objects in this Department alone is more than 200,000, the extent and scope of the various collections will be readily imagined.

#### BOTANY

Field Museum is the first general natural history museum to give to the science of botany attention and space comparable to that of other departments. Its botanical exhibits are planned to give a general idea of the plant world, its range of forms, and its relation to human life.

The exhibits in the Department of Botany occupy five large halls on the second floor. One of these, known as the Hall of Plant Life, is devoted to a display of characteristic forms of plants from the lowest to the highest. This series begins with microscopic plants, the bacteria and the minute algae which, because they are invisible to the unaided eye, are represented as they would be seen through a microscope. Of special interest are the forms



of bacteria, including some of those which cause various diseases that afflict mankind.

On the west wall of this hall is a series of mural paintings illustrating interesting and remarkable plant forms from various parts of the world, and portraying the native habitat of many plants represented in the botanical exhibits.

Woody, and fibrous parts of plants can sometimes be preserved for a long time by drying or other forms of treatment, as may be seen in the collection of palm material from various parts of the world on exhibition in one of the halls of the Department. This is undoubtedly the finest collection of its kind in existence. Usually, however, dried specimens of plants give a poor idea of their appearance in the living state. This is true of almost all the higher plants, and is one of the reasons why natural history museums generally do not attempt to represent the plant world except casually and incidentally to their other exhibits.

The technical problem of producing a satisfactory museum display of plants is solved at Field Museum by preparing carefully made reproductions of living plants for use in the botanical exhibits.

Special Museum expeditions are made to obtain material for these exhibits, and in many cases much of the work of preparing them is done in the field with the living specimens at hand. The exhibits often incorporate parts both of the natural plant and fabricated parts produced by means of the special methods developed in the Museum laboratories. For example, the trunk or branches of a tree and other durable parts may be used in combination with the reproduced leaves, fruits, and flowers, as in the cacao or chocolate tree exhibit (see illustration opposite page 28). The perishable parts are replaced by skilfully made reproductions in celluloid and other similar plastics, glass, wax, metal, and fiber.

By such methods it has been possible to assemble a varied, magnificent, and durable display of plant forms such as could not be brought together at one time in any botanical garden. These are supplemented in many cases with models illustrating on an enlarged scale significant details of structure or life history, and accompanied wherever possible by characteristic dry plant material, such as dried fruits, and seeds, gums, fibers, and other products.

Outstanding in the Hall of Plant Life is a large group illustrating the alpine vegetation of the northern Rocky Mountains. To one side of this is a somewhat smaller group showing the spring flora of an Illinois woodland. These two are the first of a series of six large dioramas planned to illustrate plant formations characteristic of widely different environments.

Two halls of the Department are devoted almost entirely to plant economics, one of them to plant materials used in industry, the other to food plants. Of interest in the latter connection are dioramas showing in miniature a modern coffee plantation of Brazil, and a tea plantation of Ceylon. A series of murals in the Hall of Food Plants parallels the exhibit, and tells in graphic form the story of man's preoccupation with his vegetable food.

The fourth and fifth botanical halls contain collections of woods, one being devoted to North American trees and the other to foreign ones. The exhibits of about eighty American woods, in Charles F. Millspaugh Hall, consist in each case of a part of the trunk of the tree with the bark intact, a cross section of the trunk, planks of finished lumber made from the tree, a photograph of a branch with leaves, flowers, and fruit, photographs of the tree as it appeared in the living state under summer and winter conditions, together with a map showing the geographical distribution of each species, and labels containing essential information. In the cases of various conifers preserved branches take the place of detailed photographs

of the foliage. In the cases of shagbark hickory and the tulip tree, reproductions of fruiting branches show the foliage and flowers or fruit. It is planned to replace the detail photographs by such branches as far as possible. Among the foreign woods, those of South America, Australia, Europe, India, West Africa, and Japan are particularly well represented.

In addition to the exhibits, the Museum maintains a large Herbarium in which the specimens are for the most part of purely scientific interest. The Herbarium contains more than 1,000,000 specimens, and is particularly rich in plants of tropical America. Included are a special herbarium of the plants of Illinois for the benefit of those interested in the local flora, and the famous Harper collection of fleshy fungi. Field Museum Herbarium includes also the Coulter Herbarium of the University of Chicago, and, as a result of co-operation with the Rockefeller Foundation, more than 30,000 photographs of type specimens of tropical American plants preserved in European herbaria. The cryptogamic herbarium includes large collections of mosses and algae, and smaller numbers of lichens and liverworts. The fungi are represented chiefly by the collections of E. T. Harper and W. S. Moffatt. There are also extensive reference collections of woods from many parts of the world, and collections of other economic material, which are available, on application to the Director, for the use of persons conducting research.

The 12,000 wood specimens include especially representative collections from tropical America, Mexico, Peru, and the Brazilian Amazon. The Herbarium and reference collections are on the third floor.

## GEOLOGY

Five large halls on the second floor are occupied by the exhibits of the Department of Geology. These exhibits are classified in two groups, one illustrating the scientific, the other the economic and industrial relations of mineral

products of the earth. The arrangement of the scientific series corresponds to that generally adopted. In the economic series the exhibits are arranged in accordance with the uses to which the materials are put in commerce and industry.

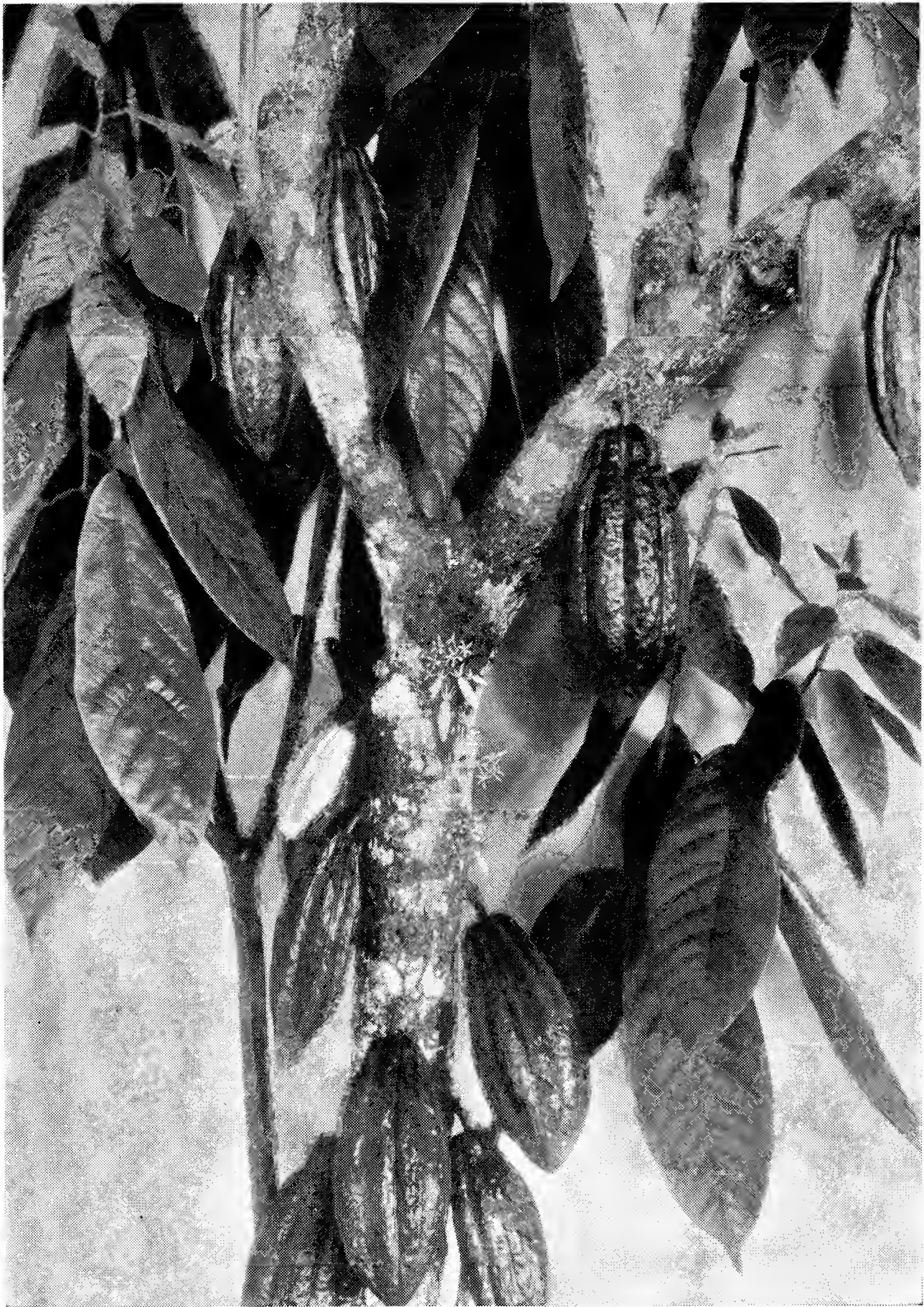
One division of the scientific series consists of an extensive collection illustrating the various mineral species classified according to Dana's system. About 700 species are illustrated by some 20,000 specimens. Supplemental to this, the large William J. Chalmers Collection of crystals illustrates different forms of mineral crystallizations.

The scientific division includes a very large meteorite collection. This contains representatives of more than 800 falls, being in this respect the most complete collection in the world. A number of massive iron meteorites are included in the collection, the largest being an individual weighing 3,336 pounds, of the Navajo, Arizona, fall.

Clarence Buckingham Hall is devoted to physical geology and lithology. The collections illustrate rock structures and the effect of the geological agents which make, bend, break, displace, and destroy the rocks.

Products of volcanic action are well illustrated. The major features of the internal structure of the earth are illustrated by a model, and another model shows how the rocks from the depths of the earth are injected into the rocks which lie above them. There is also a model in relief, nineteen feet in diameter, of the visible half of the moon. This, so far as is known, is the largest and most elaborate representation of the moon's surface ever made.

Relief maps on the walls of two corridors adjacent to Clarence Buckingham Hall include representations of such features as Yosemite Valley, Niagara Falls, the Grand Canyon of the Colorado River and other features of scenic or geological interest. In one of these corridors there is a model of the Natural Bridge of Virginia, constructed accurately to scale.



CACAO OR CHOCOLATE TREE  
A typical exhibit in the Hall of Plant Life





An unusually large and complete collection of rocks fills half a hall. The specimens are uniform in size and are arranged in an order depending on mineral composition and texture.

In the section of historical geology, or paleontology, the development of life on earth from the earliest ages to modern times is illustrated in historic sequence. An entire hall (Ernest R. Graham Hall), and half of another, are devoted to this exhibit. Ernest R. Graham Hall, the hall of vertebrate paleontology, is worthy of special attention. In this hall the fossilized remains of curious and varied forms of vertebrate life of past ages are seen. For some there are modeled restorations showing them as they appeared in life. The largest known land animals, the dinosaurs, are represented by a mounted partial skeleton, which is fifteen feet high and thirty feet long. Remains of other huge dinosaurs, including a skull of the great horned dinosaur, *Triceratops*, are also shown.

Complete skeletons of the extinct elephants known as mammoths, and the related mastodons, are exhibited, as well as the skeletal remains of cave bears, saber-toothed tigers, and other animals contemporaneous with early man. Various species of the great extinct ground sloths of South America are represented by complete skeletons, including one of the gigantic *Megatherium* and a group of large *Scelidodons*. There is also an extensive series of skulls. To represent more remote periods there are shown skeletons of American titanotheres, camels, and other primitive ungulates, and some of the various forms which developed into the modern horse.

The arrival of man in the geologic sequence is represented by a life-size group showing a family of primitive man. Another life-size group shows restorations of *Mesohippus*, a three-toed ancestor of the modern horse, and still another group consists of restorations of large hoofed animals of the extinct family known as titanotheres. These three groups are the work of Frederick Blaschke, sculptor.

There is also a large exhibit representing in life size a forest of the Carboniferous period. Typical animals, plants, and scenic features characteristic of the various periods of the earth's history are also illustrated in this hall by twenty-eight large mural paintings hung upon the walls of the hall. These are the work of the well-known artist, Charles R. Knight, and were presented to the Museum by Ernest R. Graham.

Extensive collections of fossils of the invertebrates—animals more primitive than the vertebrates in Graham Hall—and of fossil plants, occupy the west half of Frederick J. V. Skiff Hall, adjoining.

The economic geological collections are displayed in the east half of Frederick J. V. Skiff Hall and the adjoining hall. These collections are, as previously stated, arranged in groups according to their uses. In Skiff Hall are specimens of the gold, silver, lead, and platinum ores of the world, geographically arranged by countries, states, and mining districts. Methods of mining ores and of extracting the metals from them are illustrated by models which represent in miniature a gold mine, a gold stamp mill, a cyanide plant and a Hartz jig. These are followed by ores of other heavy metals, the specimens in each collection being geographically arranged. With the collection of iron ores, models of three types of smelting furnaces are shown. A series of ores of rarer elements, such as zirconium, beryllium, tantalum, titanium, radium, and the "rare earth metals" which have unusual or not universally known uses, are shown, together with various manufactured articles illustrating such uses.

Minerals important in industry other than as ores of metals occupy an entire hall. At the east end of the hall are placed the useful hydrocarbon minerals, including the mineral fuels. Another collection illustrates the usual as well as some unusual uses of peat. With the fuel collection there is a model showing the usual occurrence of



this fuel and the mode of its formation. A small model shows the orderly way in which a coal mine is laid out. Numerous useful by-products obtained when gas is made from coal fill one case. A collection of petroleums and oil sands is accompanied by a model of an oil well which illustrates the underground conditions in an oil field, and the machinery on the surface which drills the wells and pumps the oil. Other cases contain examples of the many useful products derived from petroleum. These are accompanied by a model of the original oil refinery built in Cleveland for John D. Rockefeller. The mineral fuels and mineral oils are followed by collections of other hydrocarbon minerals important to industry. These include asphalts, oil shales, and graphite. In a separate case various occurrences of the diamond are illustrated. Following the hydrocarbons are collections of numerous other minerals important to industry. Among those shown are minerals yielding barium and fluorine compounds, asbestos, mica, silica, borax, phosphates, gypsum with examples of its uses, nitrates, source minerals of magnesia and lime compounds, salt, and the minerals from which the alkalies soda and potash are obtained. These are followed by a large model of a cement plant accompanied by a collection showing in synoptic form the structural cements, including those employed in early times as well as those of the present day. Near-by is a large model of a brickyard illustrating the way clays are formed and burned to brick in a large modern plant.

The west quarter of the hall contains collections illustrating the origin and varieties of soil, and the numerous kinds of clay of industrial value. With these are placed various other clay-like minerals such as the bentonites and talcs.

## ZOOLOGY

The exhibits in the Department of Zoology consist of three main types: (1) a classified series in which each

important animal can be found in its proper place; (2) habitat groups of the animals of different countries, or of natural associations of animals, showing their habits and natural surroundings of soil, vegetation, and topography (in many cases accompanied by painted backgrounds); and (3) preparations of animals or parts of animals to illustrate facts, ideas, and theories about them in their relation to each other and to man. The last named type of exhibit, essential to the teaching function of the Museum, is relatively at the beginning of its development. When it is considered that there are more than 50,000 species of mammals, birds, reptiles, amphibians, and fishes, and further that the insects, mollusks, crustaceans, and other invertebrates run into hundreds of thousands of species, it is evident that no museum can show more than a small part of them. With due reference to space and future development; therefore, the zoological exhibits of Field Museum are carefully selected and planned. They occupy the first floor of the west wing, and several halls on the ground floor. They embrace the entire field of animal life from the lower invertebrates to the man-like apes. Six large halls are devoted to mammals, two to birds, one to fishes, one to reptiles and amphibians, one to invertebrates, and one to osteology and comparative vertebrate anatomy.

A special hall is devoted to a collection of bronze and marble sculptures representing British champion domestic animals—horses, cattle, sheep, and swine, presented by Mr. Marshall Field. There are nineteen pieces by the noted sculptor, Herbert Haseltine, notable both for realism and artistic quality.

Mammals are arranged in two series, one being systematic, to show one specimen of each of the principal species; the other in habitat groups, showing the home life, so to speak, of especially interesting or important species. In the systematic collection of mammals one finds a connected series from the curious egg-laying *Ornitho-*

*rhynchus* and the lowly marsupials to the gorilla, chimpanzee, and other man-like apes. Related species are associated in the same or adjoining cases, and the visitor will find, for example, all of the carnivorous animals together. Among them he will be able to distinguish the subordinate groups, such as the cat family, dog family, bear family, and civet family, each of which occupies one or more cases. The great division of ungulates or hoofed animals, on account of its importance and the large size of most of the species, is given space by itself in George M. Pullman Hall.

In addition to the systematic series of mammals, there are four halls of habitat groups. The largest is the hall of African mammals, now known as Carl E. Akeley Memorial Hall, which contains among other groups the principal masterpieces of the late well-known taxidermist and sculptor, Carl E. Akeley. The animals for this hall were secured by the Museum's numerous expeditions to various parts of Africa and were especially selected and prepared. In technical quality of workmanship, in artistic arrangement and in fidelity to nature, the groups set a high standard in the art of taxidermy. Noteworthy are the groups of African buffalo, the mountain nyala, greater and lesser koodoos, hartebeest, beisa, wild ass, and zebra.

Other African groups in Akeley Hall include several interesting antelopes, wart hogs, hyenas, and hunting leopards. A very large group, occupying the entire south end of the hall, shows numerous animals gathered at a water-hole on the East African plain—giraffes, rhinoceroses, zebras, an oryx, elands, and smaller antelopes. A statuesque group of African lions, the specimens for which were obtained by Mr. and Mrs. Marshall Field, is of especial interest, and occupies space near the north end of the hall.

Among groups recently completed are those of the strikingly colored antelope known as the bongo,

shown in a reproduction of a bamboo forest; the white-tailed gnu; and the distinctly marked guereza monkey, found in the forests of Ethiopia. Worthy of attention also are specimens of the rare, giraffe-like okapi, displayed near the center of the hall, and of the imposing giant sable antelope. Reproductions of a hippopotamus and a white rhinoceros in the north end of the hall illustrate an improved method of representing hairless mammals and other animals, such as amphibians, reptiles, and fishes. They are made in cellulose acetate by a process originated and developed in Field Museum. More life-like results are obtained by this method than by mounting the skins of animals of this type, since color, translucence, and surface detail can be preserved in this medium.

Two huge African elephants, collected and prepared by Carl Akeley, occupy the central space in Stanley Field Hall.

Next in importance to the African groups are those of the larger American mammals, to which one entire hall (Richard T. Crane, Jr., Hall) is devoted. There are nineteen North American and five South American groups. Especially noteworthy are four handsome scenes showing America's most common and best-loved game animal, the white-tailed or Virginia deer. They illustrate the habits and appearance of this animal in the four seasons—spring, summer, autumn, and winter—and show the care and growth of the young, the changes in color of the adults from season to season, and the interesting process of the growth, development, and shedding of the antlers. Other North American groups include the moose, elk, bison, prongbuck, mule deer, musk-ox, caribou, mountain sheep, mountain goat, beaver, mountain lion, grizzly bear, glacier bear, Alaska brown bear, and polar bear.

At the west end of this hall are the groups showing the principal larger mammals of South America—the tapir, guanaco, marsh deer, and anteater, and the jaguar and capybara.

The background paintings in this hall, as in many others in the Museum, are the work of the late Charles A. Corwin, who set the high standard for these realistic panoramas maintained throughout the Museum.

Habitat groups of Asiatic mammals are shown in William V. Kelley Hall and include some of the most important results of the Asiatic expeditions conducted by Colonel Theodore Roosevelt and Mr. Kermit Roosevelt. The entire hall accommodates twenty groups, of which eighteen are completed. Among the finished groups are those of Marco Polo's sheep, Asiatic ibex, Indian rhinoceros, takin, water buffalo, gaur ox, axis deer, Indian swamp deer, nilgai, blackbuck and chinkara, and orang. While the majority of the subjects are hoofed animals, best known to hunters and sportsmen, the Bengal tiger has a prominent place, and in the center of the hall are three other groups of carnivores including the sloth bear, the common leopard, and the snow leopard. A fourth central group shows the rare giant panda. All these groups are displayed with panoramic painted backgrounds.

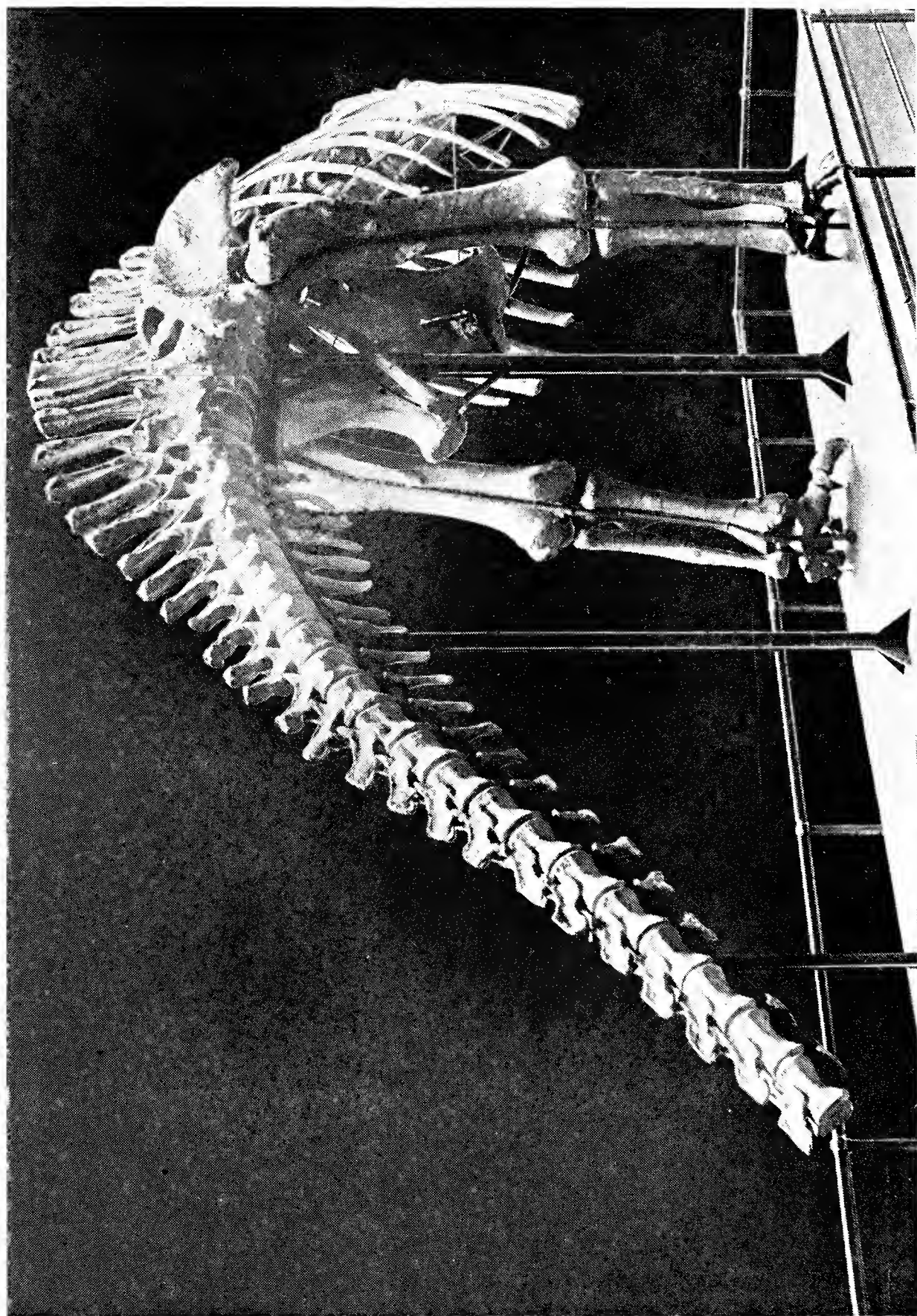
A hall on the ground floor is devoted to habitat groups of marine and aquatic mammals mostly of large size and imposing appearance. These include the northern sea-lion, elephant seal, Pacific walrus, Pacific harbor seal, Weddell's seal, the narwhal, the Florida manatee or "sea-cow," and the fur seal. Others are in preparation. The sea-lion group, one of the largest in the Museum, includes thirteen animals, and occupies a case forty feet in width and seventeen feet deep. The walrus group, obtained by the Thorne-Graves-Field Museum Arctic Expedition, shows seven of these ponderous animals in a setting of Arctic ice floes suffused by the light of a midnight sun. The elephant seal, largest of all seals, occupies a space balancing that of the walrus. An enormous bull and four other animals are shown, all obtained by the Hancock-Wegeforth Expedition to Guadalupe Island. In an attrac-

tive reproduction of a scene on the coast of Washington is displayed a group of the Pacific harbor seal, the smallest of the true or earless seals. The specimens of Weddell's seal, collected by the Second Antarctic Expedition of Rear-Admiral Richard E. Byrd in 1934-35, are shown in a scene near "Little America" in south polar regions. The narwhal, a small species of whale in which the male has a long protruding tusk, is represented by reproductions from specimens collected off the coast of Greenland by one of the expeditions of Captain Robert A. Bartlett, well-known Arctic explorer. The group showing the breeding grounds of the fur seal on the Pribilof Islands of Bering Sea is of especial biological and scenic interest.

The classified collection of birds is arranged in two sections, one embracing the North American species, and the other devoted to the foreign birds. Owing to the great popular interest in American birds, nearly all the known species are shown. In the foreign section, birds have been selected to show the principal types from the standpoint of classification, distribution, and general interest. A series of special exhibits illustrating the biology of birds has been initiated. Exhibits of this kind already in place include extinct American birds, foreign birds introduced into America, restorations of fossil birds and of the extinct Mauritius dodo, and a notable case entitled "What Is a Bird?" which sets forth the major characteristics of birds and the evolutionary relations of the birds to the fishes, reptiles, and mammals.

Another hall contains a series of beautiful habitat groups of birds, with large painted backgrounds and accurately represented natural conditions. North American birds shown include such interesting species as the golden eagle, California condor, northern loon, whooping crane, white pelican, flamingo, and various ducks, gulls, terns, and shore-birds. Some of these illustrate summer conditions and the nesting habits of the birds, while others are shown at the seasons when they gather in flocks.





SKELETON OF A DINOSAUR (*Apatosaurus*)

Excavated at Fruita, Colorado, by a Museum expedition, and now exhibited in Ernest R. Graham Hall of the Museum





Among the latter may be mentioned a group of winter birds of Lake Michigan in a setting of ice floes and frigid skies. Still another is a group of wild turkeys in which a troop of these stately birds is shown wandering through a southern forest clothed in the rich colors of autumn—a sight to delight the heart of any hunter. Eleven habitat groups of foreign birds of special interest are completed, and others are in preparation. The finished groups show: emperor penguins in their bleak Antarctic home in “Little America”; bird inhabitants of the dense rain-forest belt on the slopes of Mount Cameroon, Africa; village weaver birds and their curious habit of nesting in colonies along the banks of the River Niger in the French Sudan; typical birds of the Kalahari Desert in Africa; the rhea, a large flightless bird of southern Brazil and Argentina; the toucan of South and Central America; the quetzal, brilliantly colored and plumed national bird of Guatemala; the oropendula or hangnest of Central America; the European stork; sea birds of Laysan Island, Hawaii; the flightless kiwi of New Zealand with its enormous eggs, and the red grouse of the moors of Scotland.

The fishes are represented by specimens in systematic series and underwater habitat groups in Hall O, on the ground floor. Sharks and rays, lampreys, armored ganoids or garfishes, and other ancient types, have their place at the beginning of the series and lead on to the numerous divisions of the higher bony fishes. Related fishes are shown together, as for example, the mackerel family, including smooth-bodied, fast-swimming types such as the common mackerels, the dolphins, pompanos, and also such striking species as the sailfish, swordfish, and the gigantic marlins. Habitat groups of fishes include a beautiful trio of sea-bottom studies for which the material was obtained from the Bahama Islands by a special expedition. Other groups exhibit a tide pool on the Maine coast, and a sand bottom and oyster lump scene in the

Gulf of Mexico. The gigantic whale shark forms a notable special exhibit in this hall.

The display of reptiles and amphibians in Albert W. Harris Hall is being rapidly developed by new methods of preparation and includes various life-like reproductions of small snakes, frogs, and toads which are of unusual excellence. By the same methods certain large reptiles have been prepared, including the large South American snake known as the anaconda, the giant Komodo lizard, the reticulated python of the East Indies, and the American alligator. A large group of American crocodiles in their natural habitat, and a sea turtle shown laying its eggs on a Florida beach, will be opened in the near future. A case showing the habits and adaptations of tadpoles by means of greatly enlarged models represents the first development of the more subjective type of exhibit in this hall. The west end of Albert W. Harris Hall has been set aside for the development of exhibits of the vast group of insects, with their relatives, the spiders, myriapods, and other less well-known groups of land dwelling invertebrates.

The extensive osteological exhibits comprise complete skeletons representing almost every important group of vertebrates. Of especial interest are the skeletons of the higher apes and monkeys arranged for comparison with the skeleton of a man. A special case illustrates the evolutionary history of the human skull. A "family tree" of amphibians and reptiles is of special significance in demonstrating the theory of evolution. Skeletons of large size include those of the Indian elephant and the right whale. A noteworthy exhibit is an assembled skeleton of the extinct great auk.

A systematically arranged exhibit of invertebrates, exclusive of insects and their allies, is located in Hall M, on the ground floor. Seven cases contain marine creatures, such as sea-stars, sea-urchins, sponges, millepores,

sea-fans, and various kinds of corals. They are mostly represented by their skeletal structure or by glass models. In six cases are shown examples of more than a hundred families of mollusks, including an excellent specimen of the giant clam of the Pacific and Indian Oceans. From the ceiling are suspended life-like models of a record size squid and octopus.

In addition to the exhibition collections, the Department of Zoology has large research or study collections which are accessible to specialists and students, and which, upon application, may be consulted by anyone interested. The research collection of mammals contains more than 50,000 specimens, and is one of the most important assemblages of its kind in the world. The collection of birds numbers nearly 200,000 specimens, and is particularly rich in West Indian, South American, and North American species. The collections of fishes and reptiles are large, fishes exceeding 200,000 and reptiles including about 40,000. The insect collection is mainly local except in the case of butterflies and moths, of which there are more than 50,000 specimens from all parts of the world.

#### H. N. HIGINBOTHAM HALL

*(Gems and Jewels)*

In this hall on the second floor is displayed one of the most complete collections of gems and jewels in existence, maintained under the joint supervision of the Departments of Anthropology and Geology. It contains nearly every known variety of gems, and of precious and semi-precious stones, in the finest cut examples, and also as crystals, cleavages, and rolled grains.

This hall was recently completely reinstalled, with new and highly improved types of exhibition cases on bases of attractive English harewood with view-glasses supported by framework of bright polished bronze. Each case is individually lighted by concealed fluorescent units

which serve to bring out the color and fire of the gems in their fullest brilliance. The reconstructed hall, with its colored window of Tiffany glass opposite the entrance, provides a setting worthy of the beauty of the gems and other ornamental objects in the collection.

Some of the specimens are of historic interest and world-wide reputation. Among these is a diamond on which the bust of William II of Holland was engraved by DeVrees of Amsterdam, the work requiring five years. Gems from the famous Hope collection include a Siberian green aquamarine weighing 331 carats, and the opal known as the "Sun God," which is said to have been kept in a Persian temple for three centuries.

Blue aquamarines are exemplified by two of large size from Brazil, weighing respectively 341 and 190 carats. The series of diamonds in the collection includes several cut stones and rough diamonds from South Africa, Brazil, Russia, and Australia. Varieties of sapphire are illustrated by cut blue, yellow, and white stones and by a fine series of star sapphires. Rubies are represented by cut stones from Ceylon, Russia, North Carolina, and Montana. Cut emeralds from Russia, Brazil, and North Carolina are shown, and emerald crystals from Brazil, Colombia, and North Carolina.

The series of topaz is unusually choice and complete, including many cut stones of blue, white, pink, and golden hue, and corresponding specimens in the rough. Among the latter, a transparent crystal from Brazil of ninety pounds' weight is a notable specimen. Amethyst is shown in rough and cut stones of exceptional beauty and size, localities in Brazil, Russia, Ceylon, and Ireland being represented. A rose quartz bowl nine inches in diameter, with walls of transparent thinness, is remarkable as an exceptional piece of lapidary work. Pearls are represented by the Oriental and fresh-water varieties and a group of culture pearls.

In connection with the gems there is also shown a valuable collection of crystallized gold, wire gold, gold nuggets, and crude platinum.

The cases arranged on the walls of this hall are worthy of careful inspection. They contain Sumerian, Egyptian, Etruscan and Roman jewelry, a remarkable collection of jewelry from Algeria, Syria, and India, and prehistoric American gold ornaments.

## EXPEDITIONS

It has been the policy of all great museums to send expeditions to places far and near. They collect the materials necessary for the creation of exhibits, carry on important research, and break fresh trails by their discovery of ancient and new treasures, thus adding to the world's accumulation of knowledge. Field Museum holds a proud record as one of the leaders in expeditionary work during its comparatively short history. Its investigators have gone forth, singly and in groups, into practically every part of the world to gather material for exhibition and for study purposes. It is through expeditions that the Museum has acquired most of its exhibition material, and has been able to reach and maintain its high degree of completeness and accuracy. The immense cost of these expeditions has been borne mainly by friends of the institution.

Among those who have contributed funds to finance Field Museum expeditions or have aided in other ways to make such expeditions possible are: Messrs. Marshall Field (grandson of the Founder of the Museum), Stanley Field, James Simpson, William V. Kelley, Frederick H. Rawson, R. T. Crane, Jr., Cornelius Crane, Captain Harold A. White, Major John Coats, C. Suydam Cutting, Julius Rosenwald, Arthur S. Vernay, Philip M. Chancellor, John Borden, Alexander H. Revell, Bruce Thorne, George Coe Graves II, H. B. Conover, R. H. Everard, Arthur B. Jones, A. M. Collins, L. G. Day, Robert F. Cummings,

Joseph N. Field, Allison V. Armour, Stanley McCormick, Leon Mandel, Fred Mandel, Jr., George F. Ryan, George G. Carey, Jr., G. Allan Hancock, Mrs. Augusta N. Rosenwald, Mrs. Emily Crane Chadbourne, Mrs. Oscar Straus, and the *Chicago Daily News*.

Expeditions and field work to expand the collections were begun in October, 1894, when the late Dr. W. H. Holmes, then Curator of Anthropology, and the late Dr. C. F. Millspaugh, former Curator of Botany, were dispatched to Yucatan and other parts of Mexico to gather anthropological and botanical material. In the same year an expedition to collect ornithological specimens in Santo Domingo was conducted by former Assistant Curator George K. Cherrie, and an ethnological expedition to Alaska was made by Captain M. W. Bruce. From Egypt and Italy, the late Edward E. Ayer, first President of the Museum, brought extremely important archaeological collections.

The late Dr. Oliver C. Farrington, former Curator of Geology, was in charge of an expedition to Mexico in 1895, which obtained a large collection of volcanic and glacial material, ores, and minerals.

The first African expedition of the Department of Zoology went into Somaliland in 1896-97 under the leadership of Dr. D. G. Elliot, former Curator of Zoology. The late Carl E. Akeley, then Chief Taxidermist on Field Museum's staff, accompanied this expedition, which obtained many of the mammals in the African groups now exhibited in Carl E. Akeley Memorial Hall of the Museum.

During 1898, and succeeding years until 1910, Curator Elmer S. Riggs conducted expeditions to the Bad Lands of South Dakota, Wyoming, Nebraska, and other states, collecting the skeletal remains of extinct animals such as dinosaurs, titanotheres, rhinoceroses, camels, and other creatures which lived there in earlier geological periods. The late Dr. George A. Dorsey, former Curator of



Anthropology, and associates, collected ethnological material among the Indians of the west, northwest, and southwest parts of the United States.

A botanical expedition sponsored by Mr. Allison V. Armour enabled Curator Millspaugh to make large collections of the flora of the Antillean Islands. A gift from Mr. Stanley McCormick made possible an expedition which acquired a large amount of material illustrative of the life and customs of the Hopi Indians of Arizona.

Beginning in 1900 a series of expeditions among the Indians of North America was undertaken. Curator Dorsey collected among the tribes of Oklahoma; Mr. Stephen C. Simms, the late Director of the Museum (then an assistant curator), collected among the Piman and Yuman Indians in Arizona and California and among the Apaches, Iroquois, Crows, Chippewas, and Crees; former Assistant Curator C. L. Owen gathered material among the Apache and Navaho Indians of Arizona; Dr. J. W. Hudson made extensive collections representing the basket-making and other arts of the California Indians; and Dr. C. F. Newcombe gathered material representative of the Indians of British Columbia and Alaska.

A series of botanical expeditions to the Bahamas and other islands of the Greater Antilles, many of which had never before been botanically explored, was carried on by Curator Millspaugh and associates. Mr. Allison V. Armour sponsored several expeditions to the West Indies and to Yucatan. Between 1904 and 1911 a botanical expedition to the Bahamas was conducted in conjunction with the New York Botanical Garden. The collecting of the woods which are now exhibited in the North American wood hall (Charles F. Millspaugh Hall) extended over many years and into various sections of the United States.

During this same decade Cambrian and Trenton fossils of Wisconsin were collected by former Assistant Curator A. W. Slocum; minerals and ores were collected in North

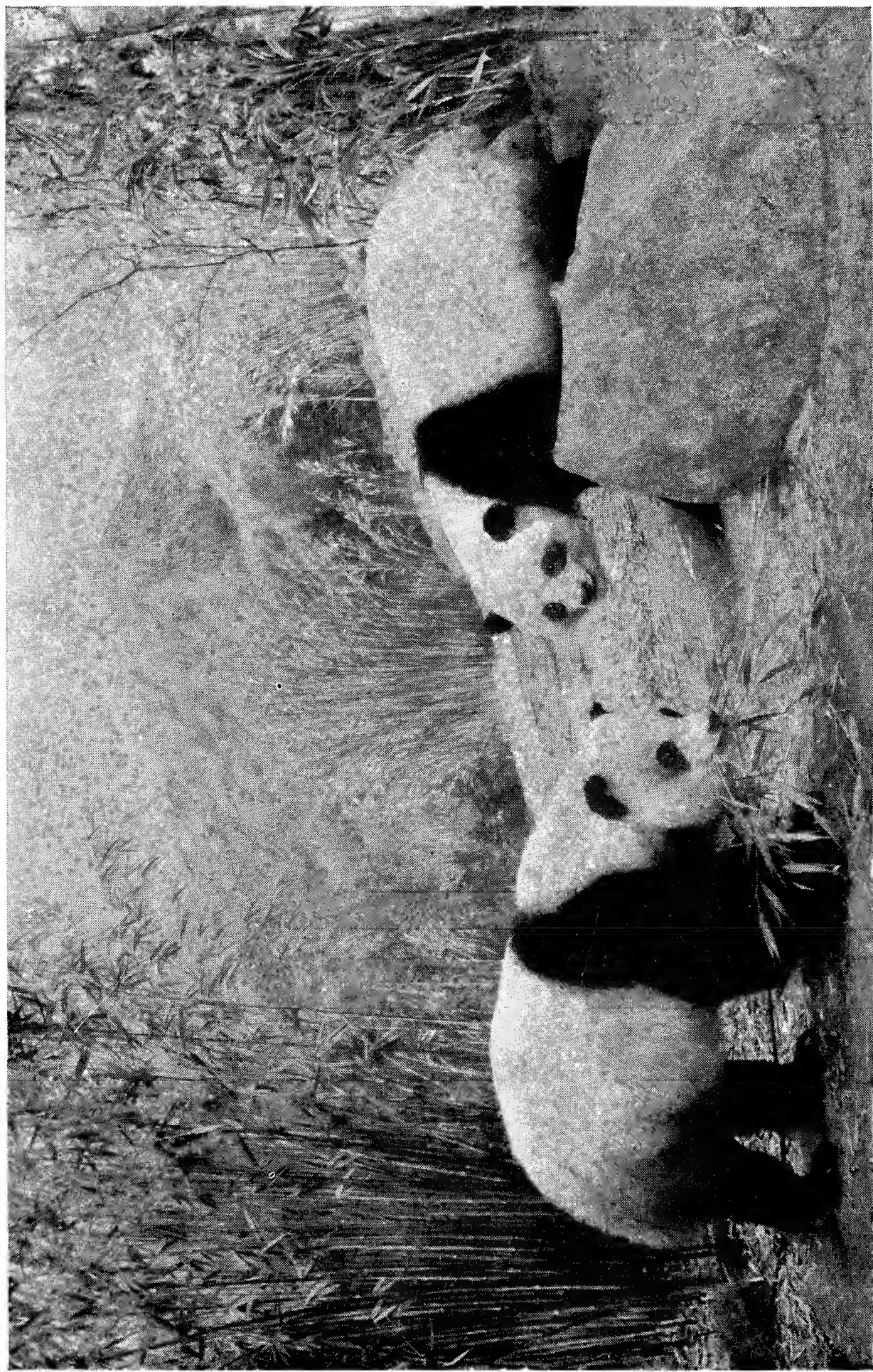
Carolina and Georgia by Associate Curator Henry W. Nichols (now Chief Curator of Geology); fishes and reptiles were collected in southern Mexico and California by former Assistant Curator S. E. Meek, and several new species of mammals were discovered among collections made in Sierra Nevada and Death Valley, California, by former Assistant Curator Edmund Heller.

A second zoological expedition to Africa in 1906-7, headed by Mr. Akeley and Mr. Heller, obtained some 2,500 specimens.

In 1906 ornithological collections were obtained in Guatemala and Venezuela by former Assistant Curator N. Dearborn, and in Saskatchewan and Venezuela by Mr. J. F. Ferry; collections of fishes and reptiles were made in Guatemala and the Tortugas by Assistant Curator Meek; and botanical collecting was conducted in Mexico by former Assistant Curator J. N. Greenman, and continued in the Bahamas by Curator Millspaugh.

Sponsored by Mrs. T. B. Blackstone, the Blackstone Expedition, under the leadership of the late Dr. Berthold Laufer, former Curator of Anthropology, spent three years (1908-10) in China and Tibet, bringing back exhibits of extreme interest and rarity, comprising more than 10,000 objects.

At about this same time an ethnological expedition was made to the Philippines, as a result of funds provided by the late Robert F. Cummings. This work was inaugurated by the late Mr. Stephen C. Simms, and was carried on for two additional years by former Assistant Curator Fay-Cooper Cole, and Dr. William Jones. While conducting research among the Ilongot of northern Luzon, Dr. Jones was slain by tribesmen. Mr. Simms returned to the field for further work later. Former Curator Dorsey collected anthropological material in Peru, India, Ceylon, Java, Australia, New Ireland, Buka, Bougainville, New Guinea, and the Philippines.



#### HABITAT GROUP OF GIANT PANDAS

The giant panda is one of the world's rarest animals. The Museum's specimens were obtained by the William V. Kelley-Roosevelts Expedition to Eastern Asia



Ethnological expeditions sponsored by the late Joseph N. Field were carried on for four years in little known regions of New Guinea, New Britain, and other islands of the South Pacific by Curator Albert B. Lewis.

In 1910 the work of collecting fossil mammals was renewed, and an expedition in charge of Curator Riggs spent a season on this task in Utah. Valuable collections of invertebrate fossils were also made at this time at several North American localities by former Assistant Curator Slocom.

Beginning at about this same time, Dr. Wilfred H. Osgood, then Assistant Curator, now Curator Emeritus of Zoology, conducted expeditions to Venezuela, Colombia, and other parts of South America, obtaining many species of birds and mammals. The late Assistant Curator Meek, during the period of construction of the Panama Canal, made exhaustive collections and studies of the fishes of the isthmus. He was accompanied by Mr. S. F. Hildebrand of the United States Bureau of Fisheries.

Curator Millspaugh at about this time made a trip to several Oriental countries, including the East Indies, and obtained many plants and plant products suitable for exhibition purposes.

In 1922 Curator Riggs conducted an expedition to Alberta, Canada, and secured a large collection of Cretaceous dinosaurs.

In 1914-15, Mr. Robert H. Becker, formerly a member of the Museum's zoological staff, collected mammals and birds in Bolivia and Brazil on an expedition financed and participated in by Messrs. A. M. Collins and L. G. Day. In 1915 an expedition, led by Staff Taxidermist Julius Friesser, procured in the Olympic Mountains specimens for a large elk group.

From 1915 to 1920, due to the world war, and to the gigantic task of moving the Museum to the new building, it was not possible to carry on much expeditionary work.

However, in 1920, Dr. Osgood again went to Venezuela, accompanied by Mr. H. B. Conover, Research Associate in Ornithology, and secured a further collection of birds and mammals.

Eight expeditions, representing four departments of the Museum, carried on work in South America in 1922, several continuing into following years. The Marshall Field Paleontological Expedition to Argentina, headed by Curator Riggs, conducted excavating operations for three years, and then, after returning to the Museum for reorganization, resumed its work in Argentina and Bolivia, continuing until the latter part of 1927. It obtained a vast amount of important skeletal material representing prehistoric animals. The Marshall Field Geological Expedition to Brazil, begun in 1922, worked in the state of Minas Geraes the first year, and in the state of Bahia during the second, under the leadership of Curator Farrington. Valuable additions to the Museum's gem and mineral collections were obtained by this expedition. A zoological expedition in charge of Chief Curator Osgood worked in Chile and Peru in 1923, and another continued work there until 1924. Archaeological investigations were conducted by former Assistant Curator John Alden Mason in Colombia for nearly two years. Botanical explorations by an expedition sponsored by President Stanley Field were conducted in 1922 in British Guiana, under the leadership of Dr. B. E. Dahlgren, Chief Curator of Botany. A botanical expedition to Peru in the same year, sponsored by Mr. Marshall Field, was led by Associate Curator J. Francis Macbride.

An expedition financed by the late Arthur B. Jones gathered ethnological collections in Sumatra, Java, Borneo, and Malaysia during 1922-23, under the leadership of former Assistant Curator Cole.

In 1922, in co-operation with Oxford University, Field Museum organized an expedition to Mesopotamia (now



Iraq) to excavate the ancient city of Kish, seat of one of the world's earliest civilizations. Operations at this site continued annually through 1932. The excavations uncovered a succession of levels extending from the middle of the fourth millennium B.C. to the fourth century A.D. Large collections of ancient artifacts, cuneiform tablets, and human skeletons were obtained, and important facts were revealed which will help clarify knowledge of early historic times. Among the most interesting finds were the remains of horse bones and wooden chariots in Sumerian tombs, indicating that the horse was domesticated by 2900 B.C. Working at the near-by site of Jemdet Nasr a new cultural period was discovered, and the name Jemdet Nasr has been adopted for this period in Babylonian chronology.

Further Oriental ethnological collections were obtained by the Marshall Field Expedition to China in 1923, led by Curator Laufer.

A zoological expedition under the leadership of Major Alfred M. Collins of Philadelphia, and former Assistant Curator Heller, left for central Africa in 1923 and remained there nearly three years. A large gorilla, a specimen of the strange-looking and rare okapi, and many other important animals were obtained.

The Museum co-operated in the work of the Third Asiatic Expedition of the American Museum of Natural History under the leadership of Dr. Roy Chapman Andrews. This expedition resulted in the acquisition of valuable fossils, including dinosaur eggs, many mammal skins, and other material from Mongolia.

An expedition to Honduras in 1923, under the leadership of Curator Karl P. Schmidt, secured a valuable series of reptiles. Other collecting in this period included that of fishes by Curator Alfred C. Weed in Louisiana and Texas, of plants in Florida by Chief Curator Dahlgren, and of birds in Alaska by Mr. H. B. Conover.



From 1924 to 1930 the expeditionary activities of the Museum reached their zenith. An unprecedented number of expeditions, in widely scattered territories ranging from equatorial to arctic zones, and with a wide diversity of objectives, were conducted. Several of the above mentioned expeditions continued into this period, and one new expedition after another was dispatched to distant places. Some of these were organized on a larger scale than any which preceded them.

Two expeditions were led by Colonel Theodore Roosevelt and his brother, Mr. Kermit Roosevelt. In 1925, and again in 1928, they explored extensive areas in southern Asia, collecting zoological material. The first of these expeditions was financed by the late James Simpson; the second by the late William V. Kelley. A principal object of the first was to secure specimens of Marco Polo's sheep and Asiatic ibex. These were obtained in the Thian Shan Mountains of Turkestan and on the Pamir plateau. Many other large mammals were brought back.

On the second expedition the Roosevelts and their associates collected rare animals in certain remote parts of French Indo-China and southern China. The expedition worked in three divisions, each covering different parts of this territory. In all more than 15,000 zoological specimens were obtained. The most noteworthy single result was the obtaining of specimens of the giant panda, one of the world's rarest animals. One specimen of this animal was shot by the Roosevelt brothers themselves, who thus attained the distinction of being the first white men ever to trail this beast successfully. The other specimen was obtained from native hunters. Other members of the Roosevelt expeditions were Messrs. George K. Cherrie, C. Suydam Cutting, Harold J. Coolidge, Jr., Herbert Stevens, Josselyn Van Tyne, Russell W. Hendee, and Ralph E. Wheeler.

Two consecutive expeditions to the sub-Arctic, made possible by the generosity of the late Frederick H. Rawson,

and led by Commander Donald B. MacMillan, obtained important results. The first, in the summer of 1926, visited Labrador, Greenland, and Baffin Land, and brought back much zoological and geological material. The following year a return was made to these regions, and more remote parts were penetrated. Anthropology and botany, as well as geology and zoology, received attention on the second trip. The scientific personnel of both expeditions was made up chiefly of members of the Museum staff, including former Assistant Curator W. D. Strong, Curators Alfred C. Weed and Sharat K. Roy, Taxidermist Arthur G. Rueckert, and former Taxidermist Ashley Hine.

Another expedition to the Arctic was made possible in 1927 through the generosity of Mr. John Borden, who donated the services of his yacht, the *Northern Light*. Mr. Borden himself led the party which explored the coast of northwestern Alaska and penetrated the polar sea as far as Wrangell Island. Specimens were obtained of Alaska brown bears, which are the largest carnivores now living, polar bears, many species of birds, and rare objects representative of Eskimo culture. Further zoological specimens were obtained in this part of the world by an expedition which was financed by the late Alexander H. Revell.

More recently (1929), Messrs. Bruce Thorne of Chicago and George Coe Graves II of New York made an expedition to Alaska and the Siberian coast, securing specimens of walrus and caribou.

Two expeditions to Ethiopia were conducted in this period. The first, starting in 1926, remained nearly a year, securing a very extensive collection of typical animals of that country. Large mammals obtained include nyala, koodoo, and other antelopes, zebras, oryx, and baboons. This expedition was financed by the *Chicago Daily News*, and was led by Dr. Wilfred H. Osgood, Chief Curator of Zoology. Other members were Messrs.

Alfred M. Bailey, Louis Agassiz Fuertes, C. Suydam Cutting, and James E. Baum, Jr. The second expedition was financed and led by Captain Harold A. White of New York and Major John Coats of London. Taxidermist C. J. Albrecht of the Museum staff accompanied the party. This expedition left in 1928 and hunted nearly a year in southern Ethiopia and near-by regions, securing a fine collection of large mammals.

A zoological expedition to central Africa in 1926-27 yielded important results. It was financed and led by Messrs. Boardman Conover, Research Associate in Ornithology at the Museum, and R. H. Everard of Detroit. Former Assistant Curator John T. Zimmer accompanied them. The expedition secured a specimen of the extremely rare so-called white rhinoceros, and collections of other mammals, birds, and reptiles.

An expedition to Brazil in 1926 was sponsored by Mr. Marshall Field and led by former Assistant Curator George K. Cherrie. Mrs. E. Marshall Field took an active part in the work. A fine jaguar shot by Mrs. Field, as well as specimens of two rare species of deer and two giant anteaters, were among the important animals obtained. This expedition had diversified objectives, with divisions collecting botanical and geological specimens, as well as zoological. Dr. B. E. Dahlgren, Chief Curator of Botany, Mr. Henry W. Nichols, Chief Curator of Geology, Mr. Karl P. Schmidt, Curator of Reptiles, Mr. Colin C. Sanborn, Curator of Mammals, and Mr. Curzon Taylor were members.

Other explorations in South America for which funds were furnished by Mr. Marshall Field included two successive expeditions to Peru in 1925 and 1926, conducted by Dr. A. L. Kroeber, the Museum's Research Associate in American Archaeology, for the study of the ancient cultures of that country; and an expedition in 1929, in charge of Chief Curator Dahlgren, to the Amazon to make col-

lections of its woods, rare plants, and economic products. Mr. Llewelyn Williams, Curator of Economic Botany, as a member of this expedition explored the Amazon Valley to its headwaters.

The Marshall Field Anthropological Expedition to Madagascar set out in 1926 under the leadership of former Assistant Curator Ralph Linton, and spent two years gathering ethnological and archaeological material, obtaining the most important collection from that island ever brought to the United States.

Three archaeological expeditions sponsored by Mr. Marshall Field have been conducted since 1927 in British Honduras and Guatemala by former Assistant Curator J. Eric Thompson. Collections and studies concerned with the early cultures of the Mayas were made by these expeditions.

Several expeditions to Europe and to the North Arabian Desert were conducted during this period by Curator Henry Field. Important collections relating to prehistoric man were obtained. The expeditions were sponsored by Mr. Marshall Field.

An expedition which circumnavigated the Pacific Ocean and collected land and marine animals for the Museum was sponsored and led by Mr. Cornelius Crane on his yacht, the *Illyria*, in 1928-29. Curator Karl P. Schmidt was leader of the scientific staff of the expedition. Other members were Dr. Albert W. Herre, Dr. W. L. Moss, and Messrs. Walter A. Weber, Frank C. Wonder, Sidney N. Shurcliff, Murray Fairbank, and Charles R. Peavy. About 18,000 zoological specimens were collected in the various islands of the South Pacific.

During the spring and summer of 1929 the Field Museum-Williamson Undersea Expedition carried on operations in the waters contiguous to the Bahamas. This expedition was provided with special equipment for collecting and observing undersea life, and secured a

remarkable and extensive collection of marine fauna, including one palmate coral weighing about two tons and measuring nearly eleven by six feet. Mr. J. E. Williamson led the expedition, and Taxidermist Leon L. Pray was one of the principal members.

Sponsored by Mr. Frederick H. Rawson, an ethnological expedition to West Africa in 1929, under the leadership of Curator W. D. Hambly, made extensive collections among the tribes of Angola (Portuguese West Africa) and Nigeria (British territory in West Africa).

Two expeditions to the South Pacific, in 1929, and again in 1930, were sponsored and led by Mr. Philip M. Chancellor. Outstanding among their collections are specimens of the giant dragon lizard of Komodo, world's largest lizard, and the reticulated python of Borneo, largest of extant snakes.

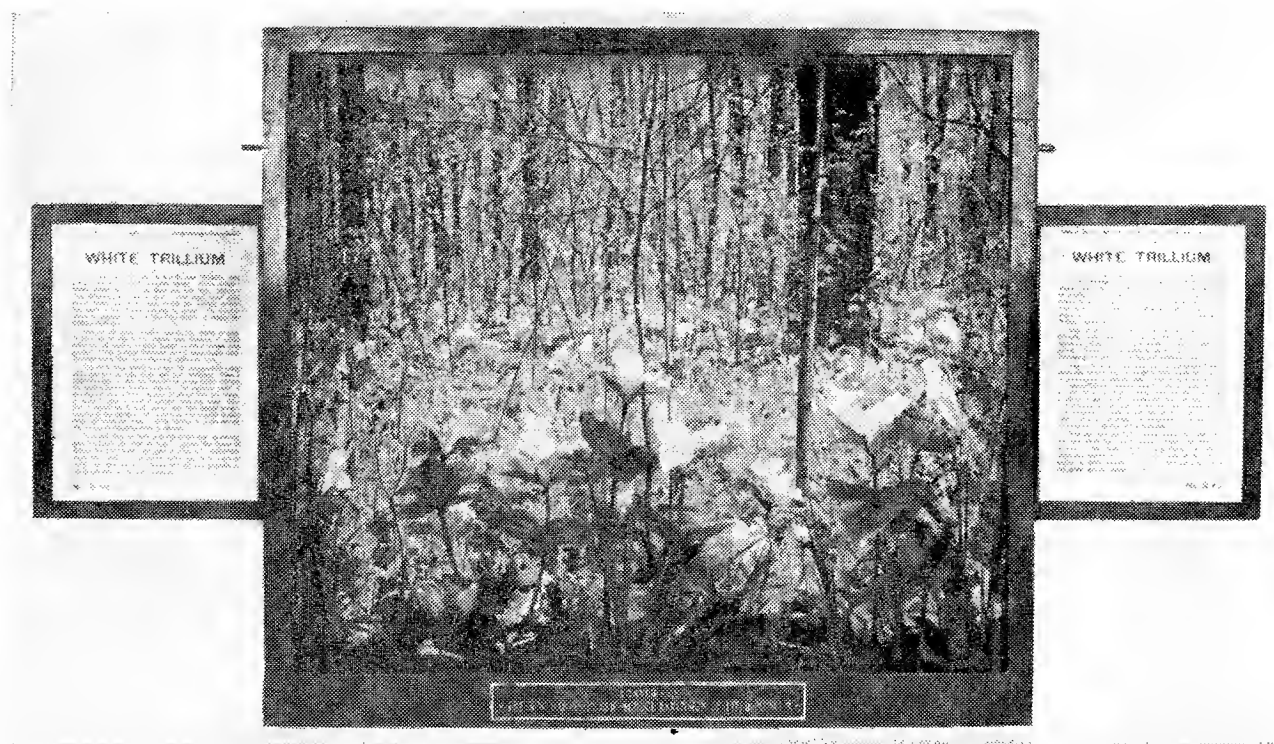
The Vernay-Lang Kalahari Expedition for Field Museum in 1930, financed and led by Mr. Arthur S. Vernay of New York and London, obtained African zoological collections remarkable for their size, variety and value. Especially desirable were specimens obtained of the rare giant sable antelope. Mr. Herbert Lang was co-leader of the expedition.

Interesting archaeological discoveries were made on the Lowry ruin and other sites in Colorado by the Field Museum Archaeological Expeditions to the Southwest in 1930, 1931, 1933, 1934, 1937, and 1938. These expeditions were originally financed from funds provided by the late Julius and Augusta N. Rosenwald, and later with funds furnished by Mr. Stanley Field. They were led by Chief Curator Paul S. Martin, of the Department of Anthropology. Information concerning new phases of southwestern cultural history and excellent collections of pottery have been obtained.

An excellent zoological collection was made in 1930 in Sikkim, India, by an expedition financed and led by



GREAT HORNED OWL



WHITE TRILLIUM

TYPES OF CASES CIRCULATED AMONG THE SCHOOLS OF CHICAGO  
BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION  
OF FIELD MUSEUM





Mr. C. Suydam Cutting, accompanied by Mr. Herbert Stevens.

Captain Harold A. White and Major John Coats led an expedition in the same year to Kenya, Uganda, and the Congo in east central Africa. Among other collections, they obtained five specimens of the bongo, one of Africa's rarest antelopes.

An expedition sponsored by Mr. Marshall Field, and led by Mr. Floyd T. Smith, spent two years in western China from 1930 to 1932 making very large collections of mammals, birds, reptiles, and fishes.

During the greater part of 1930, 1931, and 1932, Miss Malvina Hoffman, the sculptor who prepared the figures, busts, and heads representing the races of mankind now exhibited in Chauncey Keep Memorial Hall, was traveling into remote parts of the world, studying and modeling 100 representative types. This expedition was sponsored by Mr. Marshall Field.

Large mammals of Indo-China were secured for the Museum in 1931 by the Carey-Ryan Expedition to Indo-China, financed and led by Mr. George F. Ryan of Luther-ville, Maryland, who was accompanied by Mr. George G. Carey, Jr., of Baltimore.

Collections of other Indo-Chinese animals, especially birds, were secured in 1931-32 by an expedition led by M. Jean Delacour, French zoologist. Field Museum's participation was financed by the late William V. Kelley.

The Mandel-Field Museum Zoological Expedition to Venezuela, sponsored by Messrs. Leon Mandel and Fred Mandel, Jr., of Chicago, made extensive collections of birds, mammals, reptiles, and amphibians along the Orinoco River and in the easternmost part of the Andes in 1932.

In 1933, through co-operation with Dr. H. M. Wegeforth of San Diego and Captain G. Allan Hancock, a brief but very successful expedition to Guadalupe Island,

Mexico, secured specimens for a group of elephant seals, largest of the seal family.

The Leon Mandel Guatemala Expedition of 1933-34, led by Curator Karl P. Schmidt, made large collections of mammals, birds, and reptiles from various parts of Guatemala, including material for several proposed habitat groups. The Straus West African Expedition in 1934, sponsored by Mrs. Oscar Straus of New York, obtained extensive zoological collections in Senegal, Nigeria, and Angola (Portuguese West Africa). Especially notable were the collections of rare birds. Curator Rudyerd Boulton was leader.

Valuable anthropometric data concerning the origins of the peoples of the Near East and their racial relationships were collected in 1934 by the Field Museum Anthropological Expedition to the Near East. The expedition was sponsored by Mr. Marshall Field, and led by Curator Henry Field, who was accompanied by Curator Richard A. Martin. In the same year former Assistant Curator J. Eric Thompson led an expedition, jointly sponsored by Field Museum and the Carnegie Institution of Washington, D.C., to a Maya ruin in British Honduras. Several spectacular specimens were recovered, and much new ceramic and architectural information obtained.

The Museum was enabled to participate in the Second Byrd Antarctic Expedition, 1935, through the Emily Crane Chadbourne Fund. In this manner the institution obtained three desirable specimens of Weddell's seal for a proposed habitat group in the Hall of Marine Mammals, and also a crab-eating seal, specimens of which are uncommon in museum collections. An indirect result of the same expedition was the acquisition of ten of the rare emperor penguins, which came as a gift from the Chicago Zoological Society.

In 1935 and 1936 the Museum benefited by two expeditions to Greenland, conducted by Captain Robert

A. Bartlett, the most notable acquisition being material for a group of narwhal.

In 1937, Dr. Wilfred H. Osgood, Chief Curator of Zoology, made a brief but very successful zoological expedition to French Indo-China; Assistant Curator Emmet R. Blake worked in British Guiana and southern Brazil making important zoological collections; and Curator Llewelyn Williams conducted a botanical expedition in southern Mexico.

Specimens of fur seals for a large habitat group were collected in 1937 in the Pribilof Islands by Staff Taxidermist C. J. Albrecht.

Important specimens of fossil mammals were collected in southwestern Colorado in 1934, 1937, and 1939 by Assistant Curator Bryan Patterson and Mr. James H. Quinn, of the Department of Geology staff.

During 1937, 1938, 1939, and 1940, Dr. Sharat K. Roy, Curator of Geology, conducted expeditions in certain western and eastern states to collect specimens illustrating structural and dynamical geology for Clarence Buckingham Hall (Hall 35).

Mr. Sewell Avery, of Chicago, a Trustee of the Museum, sponsored four expeditions in 1938: a zoological expedition to little known interior regions of British Guiana, led by Assistant Curator Emmet R. Blake; a botanical expedition to Guatemala led by Curator Paul C. Standley; another botanical expedition to Nova Scotia, led by Curator John R. Millar, and a geological expedition to both western and eastern regions of the United States, led by Curator Sharat K. Roy. In 1939-40, Assistant Curator Julian A. Steyermark conducted a botanical expedition to Guatemala, and Curator Francis Drouet and Mr. Donald Richards collected plants (especially cryptogamic species) in the southwestern United States and Mexico. In 1940-41 Curator Standley conducted a further expedition to collect plants of Guatemala.

Dr. Wilfred H. Osgood, Chief Curator of Zoology, in 1938 conducted an expedition concerned with biological research in New Mexico.

Mr. Stanley Field financed another expedition to the Southwest in 1939. The expedition, under the leadership of Dr. Paul S. Martin, Chief Curator of Anthropology, spent four months excavating in central western New Mexico, the heart of the Mogollon country. The results of the expedition may be obtained in a Museum publication.

An important undertaking in 1939-40 was the Magellanic Expedition of Field Museum, under the leadership of Dr. Wilfred H. Osgood, Chief Curator of the Department of Zoology (now Curator Emeritus). Its work was the collecting of specimens over a broad field including parts of southern Peru, Bolivia, Chile, the shores of the Straits of Magellan, and the island of Tierra del Fuego at the foot of South America (noted as one of the world's windiest spots). Other members of the party were Curator Karl P. Schmidt, Curator Colin C. Sanborn, and Mr. John M. Schmidt. In addition to making comprehensive collections of the fauna of the regions indicated, this expedition had as a prime objective the assembling of data to supplement the work of Charles Darwin, who pioneered in scientific research in the more remote parts of this area during the famed voyage of the *Beagle* in 1834.

Invertebrates, and specimens for a habitat group of sea turtles, were collected in 1939 by an expedition to southern Florida conducted by Curator Fritz Haas and Staff Taxidermist Leon L. Walters. In the same year an expedition conducted by Messrs. Melvin Traylor, Jr. and Wyllys Andrews, of Chicago, collected exotic birds of the Yucatan Peninsula.

An expedition to South Dakota and Nebraska in 1940, led by Mr. Paul O. McGrew, Assistant Curator of Paleontology, collected specimens of fossil mammals and reptiles.

On an expedition conducted in 1940 by Mr. Leon Mandel, of Chicago, aboard his yacht *Buccaneer* (which has since been transferred to the United States Navy), Curator Rudyerd Boulton and Curator D. Dwight Davis obtained important collections of birds, mammals, reptiles, amphibians, fishes, and invertebrates on seldom visited islands of the Caribbean Sea.

A similar expedition to the Galapagos Islands was financed and conducted by Mr. Mandel in 1941. The scientific party consisted of Curator Emeritus Osgood, Curator Boulton, Assistant Curator Loren P. Woods, Staff Taxidermist Walters, Mr. Melvin L. Traylor, Jr., Associate in Birds, and Mr. Ronald Lambert, volunteer. Large collections of birds, reptiles, and fishes were made on several islands, and materials for a colorful habitat group of fishes were obtained. Molds of a large devilfish or manta ray were made from a specimen harpooned by Mr. Mandel. The party sailed on a yacht that Mr. Mandel had chartered.

In addition to the expeditions detailed herein, there have been numerous field operations on a smaller scale conducted under the auspices of the Museum from time to time in various parts of the United States, Canada, Europe, South America, Asia, and elsewhere. For several years, through the generosity of the John G. Shedd Aquarium, the Museum has been permitted to share in the collections obtained by expeditions of that institution.

## RESEARCH

Most of the scientific research conducted under the auspices of the Museum is carried on either in the field in conjunction with its expeditions, or at the Museum itself where detailed studies are made of many of the specimens brought in by expeditions or obtained otherwise. The greater part of this work is done by members of the institution's own scientific staff, but the Museum's material is often made available also to outside scientists

who are especially fitted to conduct research on certain specialized subjects. Shipments of scientific material on loan are sent out and received almost daily.

A special project to aid American botanical research, conducted in Europe for more than ten years under the direction of Associate Curator J. Francis Macbride, was concluded late in 1939. This task was begun under a generous grant of funds made to the Museum in 1929 by the Rockefeller Foundation. Its purpose was to provide photographs of thousands of "type specimens" \* of plants preserved in the leading herbaria of the world. The photographs not only provide an important scientific reference collection at Field Museum, but copies of them are made available to all other scientific institutions at the bare cost of production. The value of such collections to working botanists is incalculable.

## THE LIBRARY

Field Museum has one of the most important natural history libraries in the country, containing more than 120,000 scientific books and pamphlets, among which are included many rare and valuable volumes long out of print. The Library is available to students and the general public for reference purposes, as well as to the staff of the Museum and other scientific workers. There is a general library, and linked with it are four departmental libraries corresponding to the scientific Departments of the Museum—Anthropology, Botany, Geology, and Zoology.

In the reading room of the Library are files of the current scientific periodicals and publications of contemporary societies and institutions throughout the world. Here also are reference works of general character. The works covering specific subjects are largely in the departmental libraries.

\* "Types" are the first specimens of a species to be named and described, and by means of them other representatives of the species may be identified.

The Library has been the recipient of many generous gifts of books and collections of books, including numerous especially rare and fine ones. A particularly notable gift was that of the late Edward E. Ayer, former President and Trustee of the Museum, who presented the famous Edward E. Ayer Library of Ornithology. This is a most unusual collection of works on birds, which contains many rare and beautifully illustrated volumes by Audubon, Bonaparte, Buffon, Elliot, Gould, Lilford, Sclater, Seebohm, Temminck, Wilson, and other noted authorities. Mr. Ayer also presented a unique collection of some 1,600 works on angling and ichthyology. Another book collection of great importance is that of some 5,000 volumes on Chinese subjects given to the Library by the late Dr. Berthold Laufer, former Curator of the Department of Anthropology and noted Orientalist. Also a contribution from Dr. Laufer are some 7,000 books in the Chinese language, and manuscripts from Tibet.

Other additions to the Library are acquired by purchases, and through the exchange of publications with other institutions. The exchange system is a medium which has been used since the establishment of the Museum. The publications issued by the Museum have been sent out freely to universities, public libraries, scientific societies, academies, and other institutions not only in this country but abroad, and from these institutions there have been received in return such publications as they issue. As much of the best scientific matter appears first in serial form there is thus brought to the Library much almost invaluable material obtainable in no other manner.

## FIELD MUSEUM'S WORK AMONG CHILDREN

Among the most important phases of the Museum's work for the advancement of education are the extension activities carried on to benefit the school children of Chicago. Two special units of the Museum organization,



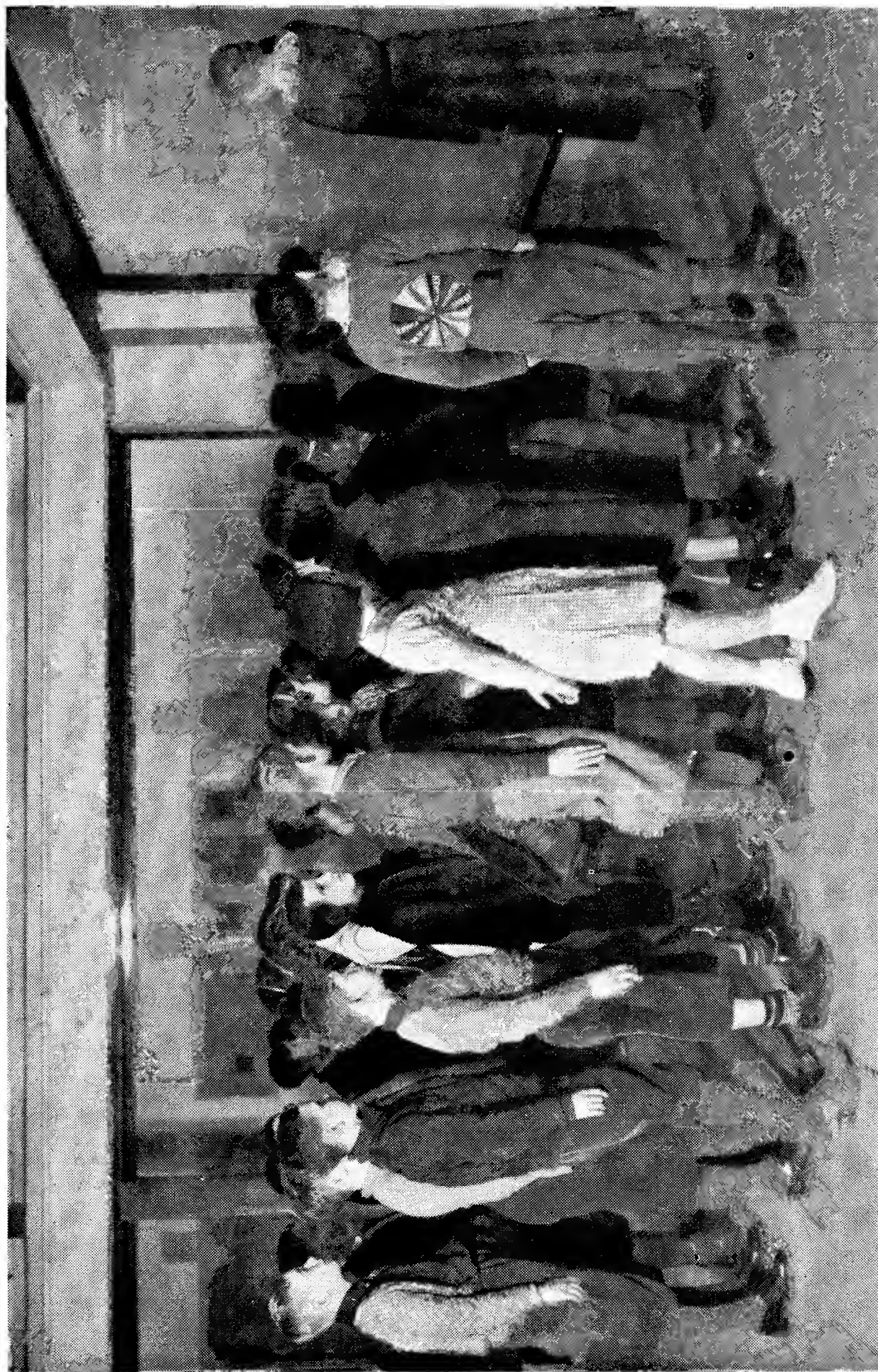
each with its own staff, are devoted to this work. They are the Department of the N. W. Harris Public School Extension, and the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, each conducting different types of activity.

#### THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

The Department of the N. W. Harris Public School Extension was founded in 1911 as the result of an endowment of \$250,000 provided by the late Norman Wait Harris. This endowment was later increased by Mr. Albert W. Harris, who made additional gifts of \$254,663, and by other members of the Harris family, who contributed \$20,000.

Through this Department, Field Museum is enabled to keep in daily contact with the children in every public school in Chicago, and many other schools and institutions of the city also. It might be said that this Department has established a branch of the Museum in each of these schools, for during the entire length of their working year it equips them with museum cases containing natural history and economic exhibits, which are changed every two weeks, bringing a wide variety of subjects to the children's attention. These traveling exhibits, of which more than 1,100 have been prepared and are available for circulation, contain birds, small mammals, fishes, reptiles, flowers, rocks and minerals, physical geography exhibits, industrial products, and other material attractively arranged. They are equipped with labels telling in simple language the most important points about each. With few exceptions, their scope is limited to features of the region within 100 miles of Chicago, thus presenting the things which are most likely to come within the range of the average child's immediate experience.

More than 480 schools and other institutions regularly receive the service of the Harris Extension, and through these approximately 500,000 children are reached con-



### SCHOOL CHILDREN AT THE MUSEUM

A typical group on a tour under the guidance of one of the staff lecturers of the James Nelson and Anna Louise Raymond Foundation



tinually. Of the more than 1,100 cases currently available for circulation, 960 are in daily use in the schools.

Transportation of the cases to the schools is handled by trucks operated by the Museum, which bears this and all other expenses in connection with the work. A few cases typical of those sent out by the Harris Extension are on exhibition in Stanley Field Hall.

THE JAMES NELSON AND ANNA LOUISE  
RAYMOND FOUNDATION

The James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures was established in 1925 by Mrs. James Nelson Raymond, who provided an endowment of more than \$500,000, and who has made further contributions since then totaling \$75,422. Through this Foundation the Museum presents lectures, motion pictures, and lantern slides for the entertainment and instruction of children, both at gatherings in the Museum itself and in the classrooms and assembly halls of the schools. The Foundation is also in charge of special work to aid students of high schools and colleges.

Two series of entertainments for children, in the spring and autumn, are given annually in the James Simpson Theatre of the Museum under the provisions of the Raymond Foundation. Often a series is given also in the summer, and special programs are given from time to time. These consist chiefly of educational motion pictures, with occasional lectures, story-hours, and tours of Museum exhibits as added features. Admission is free.

In co-operation with the Board of Education of Chicago, and the authorities of various parochial and private schools, classes of children are brought to the Museum from time to time, both during and out of school hours, for tours of the exhibits, conducted by Raymond Foundation staff lecturers. The Museum studies are made a credited part of the pupils' school work. A correlation

has been established between the Elementary Public School Curriculum prescribed by the Board of Education, and Museum exhibits, whereby special work in the Museum is provided for every school grade. This work is done in connection with the classroom studies in geography, history, science, and manual arts.

The extension lecturers sent out to the schools by the Raymond Foundation to give talks on various natural history subjects before classrooms and assemblies, take with them series of lantern slides. Great numbers of children receive supplementary education by this means.

The entertainments, lecture tours, and extension lectures provided by the Raymond Foundation total more than 2,200 annually. The children reached by all the activities of this Foundation number about 270,000 a year.

## LECTURES FOR ADULTS

As part of its program for providing adult educational facilities, Field Museum presents annually two courses of free illustrated lectures on science and travel. These are given each spring and autumn on Saturday afternoons, in the James Simpson Theatre of the Museum. Eminent scientists, naturalists, and explorers are engaged to give these lectures, which are illustrated with motion pictures and stereopticon slides. Many thousands of persons attend.

Additional thousands of adult visitors receive cultural development by participation in guide-lecture tours of Museum exhibits conducted by members of the Museum staff. These are given daily, except Saturdays and Sundays, at 2 P.M. On Thursdays the tours are general, covering outstanding exhibits in all departments of the institution. On other days lecture tours on special subjects are offered. A schedule of these is drawn up each month, and is obtainable in advance in printed form.

During July and August additional lecture tours are given at 11 A.M.

Special guide-lecture service is available also to parties of ten or more persons, by arrangement with the Director a week in advance of the intended visit. No charge is made for this service, which is designed especially to meet the needs of conventions, clubs, and other such groups.

A recent innovation consists of Sunday afternoon lecture-tours conducted by Mr. Paul G. Dallwig, volunteer layman lecturer. A new subject is studied each month. Tours begin at 2 P.M. Participants must make advance reservations by mail or telephone (Wabash 9410). Parties are restricted to 100 persons.

## FIELD MUSEUM PUBLICATIONS

Field Museum makes a notable contribution to the world's store of scientific information by the publication of numerous books and pamphlets resulting from the work of its expeditions and from other research conducted under its auspices. The publications include highly technical works, of value to persons actively engaged in scientific endeavor, and popular leaflets on scientific subjects for the dissemination of knowledge among laymen.

The regular scientific publications, begun early in the history of the institution, comprise the following series: Anthropological, Botanical, Geological, Zoological, Historical, and Annual Reports of the Director. Altogether 465 works have been published in these series up to date. They are chiefly of technical character, and are given free distribution internationally among museums, libraries, and higher institutions of learning, and are exchanged with contemporary scientific authors both in this country and abroad. They are made available also to other persons to whom they would be of use, at prices barely covering the cost of printing. The list of institutions and individuals now receiving them regularly comprises more



than 1,200 names. In exchange, the Museum receives many valuable publications for addition to its Library.

For general readers the Museum publishes series of Anthropological, Botanical, Geological, and Zoological leaflets, written in popular style. Eighty-six of these have been published to date. They also are sent to a regular mailing list of nearly 800 institutions and individuals, both in the United States and foreign countries. In addition, they are widely sold to the general public at cost prices.

Other works issued from Field Museum Press include the Memoirs Series of quarto-size scientific publications on the results of specialized research conducted under the auspices of the Museum; the Technique Series of handbooks on new and efficient methods of museum work developed at this institution; the Design Series, intended for the use of artists, art students, designers, textile workers, etc.; and numerous special leaflets, handbooks, portfolios, and other works. For the convenience of Museum visitors, there are published a General Guide to the collections as a whole, and a series of special guidebooks covering in detail, with much supplementary information, certain divisions of the exhibits.

The Museum also publishes a monthly bulletin, *Field Museum News*, which is circulated among the several thousand members of the institution. This carries news and announcements of all current Museum expeditions, lectures, new exhibits, and other activities, and special feature articles and pictures on scientific subjects.

To produce all these publications, and to print the many thousands of labels necessary for the exhibits, and other printed matter required by the Museum, such as posters, post cards, stationery, etc., the institution has its own large and complete book and job printing and binding plant, equipped with modern typesetting machinery and presses, and other apparatus. A large force of printers



is employed, and various members of the Museum staff devote much time to writing and editorial work. One Division of the Museum is occupied with the prompt and efficient distribution of the publications.

## OTHER DIVISIONS OF THE MUSEUM

For the purposes of illustrating its publications, producing post cards and other pictures for public distribution at nominal cost, as well as preparing photographs needed in the work of the scientific staff, the Museum has Divisions of Photography and Illustration. These are provided with the most complete and modern equipment, and are staffed by competent photographers, collotypers, and artists.

For the information of the public, notices of all lectures, new exhibits, work of expeditions, results of research, and other activities of the Museum are released to the newspapers and news distributing agencies by the Division of Public Relations. By this means important news from the Museum receives world-wide publication, while those activities such as lectures which are of purely local interest are featured in the newspapers of Chicago and suburbs. Radio, motion pictures, and other media of publicity are also utilized.

Relations between the Museum and its Members (now numbering nearly 4,200 persons) are maintained by the Director of the Museum through the Division of Memberships. Application for membership (or information about membership) should be made to the Director.

Other divisions of the Museum are devoted to such varied work as recording all the hundreds of thousands of objects received for the collections; auditing; purchasing of supplies; maintenance of the building, and engineering.

## SOURCES OF INCOME

Income for the support of Field Museum is derived from various sources, the chief of which are the benefac-

tions provided by public-spirited citizens. Of the \$9,430,241 received from the Founder, Marshall Field, approximately \$4,500,000 has been reserved as permanent endowment. This sum has been invested, and only the income yielded by it is used.

Other generous civic leaders who have contributed funds in large amount to meet the Museum's needs are Mr. Marshall Field (grandson of the Founder), who has made contributions which totaled on December 31, 1940, \$2,325,725; Mr. Stanley Field, President of the Museum since 1909, who had contributed up to the same date a total of \$1,540,618; the late Edward E. Ayer, who contributed \$314,131; the late Martin A. Ryerson and his wife, the late Mrs. Carrie Ryerson, from whose estates have been received the proceeds of bequests amounting to \$528,110; the late Norman Wait Harris, who contributed \$250,000 to endow the N. W. Harris Public School Extension of the Museum; Mr. Albert W. Harris, who provided an additional \$254,663, and other members of the Harris family, who gave \$20,000 to increase the Harris Extension endowment; Mrs. James Nelson Raymond, who provided an endowment of more than \$500,000 as a memorial to her husband, and has made further contributions of \$75,422, for the carrying on of the diversified educational activities of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Persons contributing \$100,000 or more are designated in the Museum membership classifications as Benefactors. In addition to the above-mentioned, fifteen other Benefactors are now listed. They are: Miss Kate S. Buckingham, Mr. Cornelius Crane, the late R. T. Crane, Jr., the late Joseph N. Field, the late Ernest R. Graham, the late Harlow N. Higinbotham, the late William V. Kelley, the late George M. Pullman, the late James Nelson Raymond, the late James Simpson, the late Mrs. Mary

D. Sturges, Mrs. Diego Suarez, the late George T. Smith, the late Mrs. Frances Ann Gaylord Smith, and the late Frederick H. Rawson.

Persons giving \$1,000 to \$100,000 in money or materials are designated as Contributors. One hundred and nineteen Contributors are now on the rolls. Countless smaller contributions are continually received.

The Museum has a total membership of approximately 4,200 persons. Certain classes of Members make contributions of \$50 to \$500 covering Life and intermediate classes of membership; others pay annual dues of \$10 to \$25, according to the class of membership they select. Holders of memberships receive certain privileges outlined elsewhere in this pamphlet (under heading MEMBERSHIP, p. 70).

Further income is derived from a tax levy authorized by the state legislature, receipts from which now average about \$100,000 a year. A small amount of income is derived from the 25-cent admission fees paid by adult visitors on Mondays, Tuesdays, Wednesdays, and Fridays (admission is *free* on Thursdays, Saturdays, and Sundays, and free to children on all days).

Expeditions of the Museum are largely financed by special contributions. The names of those who have given funds for this purpose will be found in this pamphlet under the heading EXPEDITIONS (p. 41), where also are sketched the results of the expeditions.

## GENERAL MUSEUM INFORMATION

### LOCATION

Field Museum is located in Grant Park near Lake Michigan, the main entrance facing Roosevelt Road at Field Drive. Regular service direct to the entrance is maintained by the Jackson Boulevard busses (No. 26) of the Chicago Motor Coach Company, with free transfers to and from all other lines of the company. The Illinois Central main and suburban station is only two blocks from the Museum. Surface cars of the Roosevelt Road Line have their eastern terminus in Grant Park about a block from the Museum. Elevated lines and interurban lines provide transportation to within a few blocks of the Museum. There are excellent drives for automobiles, and ample free parking space.

### HOURS AND RULES OF ADMISSION

The Museum is open to the public every day of the year (except Christmas and New Year's Day) during the following hours:

November, December, January, February	9 A.M. to 4 P.M.
March, April, September, October	9 A.M. to 5 P.M.
May, June, July, August	9 A.M. to 6 P.M.

On Thursdays, Saturdays, and Sundays admission is free. On other days an admission fee of 25 cents is charged to adults. No return admission checks are issued.

CHILDREN ARE ADMITTED FREE ON ALL DAYS. Students and members of the faculty of any recognized university, college, school, or institute are admitted free upon presentation of proper credentials.

### CHECKING

Canes, umbrellas, and parcels *must* be checked at the entrances. Coats may also be checked. A fee of 5 cents is charged for this service.

### TELEPHONES

Public telephones are located west of the main (north) entrance.

### WHEEL CHAIRS

Visitors desiring the use of wheel chairs may obtain them at the main (north) entrance. A fee of 25 cents per hour is charged for chairs, and attendants must be furnished by the applicants. A deposit of \$1 is required on each chair.

### THE LIBRARY

The Museum Library, containing 120,000 volumes, is open for reference weekdays from 9 A.M. to 4 P.M., except Saturdays when it closes at noon. Closed all day on Sundays.

## THE BOOK SHOP

To provide a reliable source of supply for authoritative books in the many fields of science within the scope of Field Museum, a Book Shop is maintained at the east side of the north entrance to Stanley Field Hall. Through The Book Shop there are available at one location books by reputable authors on anthropological, botanical, geological, and zoological subjects, as well as on explorations and other activities related to the work of the Museum. Included are the products both of Field Museum Press and of other publishers. All of the books kept regularly in stock have been passed upon by qualified members of the Museum's scientific staff. There is a large selection of books for children, as well as for adults. These include books which are amusing as well as educational—books for reading *to* the youngest children, books for reading *by* children of various ages, picture books, books of drawings to be colored, attractively prepared atlases, etc. On special orders the Museum Book Shop will obtain for purchasers practically any book available from any publisher or dealer in the world. Books may be purchased by mail order, but it is necessary to require payment in advance, as the Museum does not carry accounts. In addition to books, there are on sale miniature representations of various animals in bronze and other materials, for use as souvenirs, library decorations, and toys. Some of the larger figures are designed to serve as book ends. There are also on sale illuminated globes bearing maps of the world.

## LUNCH ROOMS

There is a Cafeteria on the ground floor where meals and refreshments may be obtained. Accommodations are also provided in rooms near the Cafeteria for school children and persons who bring their lunches.

## SPECIAL PRIVILEGES

Hand cameras may be used at any time, but to make photographs requiring use of tripods or flashlights the Director's permission must be obtained. Likewise, for sketching requiring use of an easel, chair, etc., the Director's permission is necessary.

The Research Collections are not open to the public but may be visited by students, specialists, and Members of the Museum upon application to the Director when requests meet with the approval of the Chief Curators.

## MUSEUM TOURS AND GUIDE SERVICE

At 2 P.M., on Monday, Tuesday, Wednesday, Thursday and Friday of each week, guide-lecturers conduct tours through various sections of the Museum. Thursday tours are general; on other days special subjects are covered according to a schedule, copies of which may be obtained at the north entrance or by mail on request. Tours last an hour and may be taken, without charge, by any visitor.

During July and August, on the same days, additional lecture tours are given at 11 A.M.

The services of a guide-lecturer may also be engaged, without charge, by clubs, conventions, classes from public, parochial and private schools, or other parties of ten or more individuals. Written

application for this service should be made to the Director of the Museum at least a week in advance of the intended visit.

### LAYMAN LECTURE TOURS ON SUNDAYS

Each Sunday afternoon at 2 o'clock, during the seven months' period from November 1 to May 31, special lecture tours are offered for adults. These are conducted by The Layman Lecturer, Mr. Paul G. Dallwig, a Chicago business man and Member of the Museum, whose deep interest in scientific subjects has led him to give his services for this work without cost to those participating or to the institution. He is an impressive and dramatic speaker, who conveys authentic information about the exhibits seen on these tours. His subject is changed each month, and information as to the current topic may be obtained in advance from the Museum. The wide scope of his lectures is indicated by the following typical titles: "Digging Up the Caveman's Past," "Nature's 'March of Time,'" "The Parade of the Races," "Gems, Jewels, and 'Junk,'" "The Romance of Diamonds from Mine to Man," "Night Riders of the Sky," and "Who's Who in the Mounted Zoo." It is necessary to make reservations in advance for each Sunday tour, as the number that can be accommodated is limited. Reservations may be made by personal application to attendant at the North Entrance, by mail, or by telephone (Wabash 9410).

### ILLUSTRATED LECTURES IN THE THEATRE

Courses of free illustrated lectures on science and travel are given for the public on Saturday afternoons at 2:30 o'clock during March, April, October, and November in the James Simpson Theatre on the ground floor of the Museum. Men prominent in the fields of exploration and research are engaged for these lectures. Both motion pictures and colored stereopticon slides are used to illustrate them.

Other lectures, by members of the Museum's scientific staff, are frequently broadcast by various radio stations. Occasionally Americanization programs are presented for the foreign-born.

### MEMBERSHIP

Field Museum has several classes of Members. Annual Members contribute \$10 annually. Associate Members pay \$100 and are exempt from dues. Sustaining Members contribute \$25 annually for six consecutive years, after which they become Associate Members and are exempt from all further dues. Life Members give \$500 and are exempt from dues. Non-Resident Life Members pay \$100, and Non-Resident Associate Members \$50—both of these classes are also exempt from dues. The Non-Resident memberships are available only to persons residing fifty miles or more from Chicago. Those who give or devise to the Museum \$1,000 to \$100,000 are designated as Contributors, and those who give or devise \$100,000 or more become Benefactors. Other memberships are Honorary, Patron, Corresponding, and Corporate, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to *Field Museum News*, a monthly bulletin containing news of current

Museum activities and articles on scientific subjects, is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

## FIELD MUSEUM PUBLICATIONS

To date 465 works have been published by Field Museum Press in the Anthropological, Botanical, Geological, Zoological, Historical, and Annual Report Series of Publications. In addition, eighty-six leaflets on scientific subjects, written in popular style for the layman, have been published. These are for sale at nominal prices barely covering the cost of printing. Price list of the Publications may be had on application; the Leaflets are listed in following pages of this Handbook. Additional works issued by Field Museum include the Memoirs Series of quarto-size publications on the results of specialized research; the Technique Series, devoted to Museum methods of work; the Design Series, prepared for the use of artists, designers, art students and teachers, textile workers, etc.; and numerous special leaflets, handbooks, guidebooks, portfolios of pictures, and other works. *Field Museum News* is a monthly bulletin published exclusively for Members of the Museum.

## SETS OF POST CARDS

Field Museum has published fifty sets of post cards illustrating subjects represented in the exhibits of the Departments of Anthropology, Botany, Geology, Zoology, and the N. W. Harris Public School Extension. These cards are printed by the collotype process, and each one contains a brief text. The sets are in special envelopes prepared for convenience in mailing, but they also may be mailed as individual post cards if desired. They are suitable, too, for mounting in albums, and can thus be made into a pictorial natural history library. For children they are especially valuable.

Following are the subjects, numbers of cards in each set, and prices:

### ANTHROPOLOGY

Numbers and subjects of sets	Cards in sets	Price
1. Archaic Bronzes, China	16	\$ .30
2. Sung Bronze Vases, China	10	.20
3. Bronze Figures, China	15	.30
4. Ancient Pottery, China	14	.30
5. Mortuary Clay Figures. <i>a.</i> Human Figures, China	10	.20
6. Mortuary Clay Figures. <i>b.</i> Animal Figures, China	14	.30
7. Buddhist Sculpture, Buddhas, China	7	.15
8. Buddhist Sculpture, Bodhisatvas, China	14	.30
9. Buddhist Sculpture, Monks, China	6	.10
10. Buddhist and Taoist Sculptures, China	10	.20
11. Imperial Costumes, China	6	.10
12. Actors' Costumes, China	8	.15
13. Lama Mystery-play, Tibet	13	.30



Numbers and subjects of sets	Cards in sets	Price
14. Folk Costumes, Tibet	10	\$.20
15. Buddhistic Sculpture, India	14	.30
16. Ancient Sculpture, Mexico	8	.15
17. Ancient Pottery, Peru	15	.30
18. Drums, Daggers, Bags, New Britain, New Guinea	11	.20
19. Household Utensils, Admiralty Islands and New Guinea	10	.20
20. Human and Animal Figures, New Guinea	10	.20
21. Ceremonial Masks, New Guinea and New Hebrides	8	.15
22. Malagan Figures and Masks, New Ireland	10	.20
23. Wooden Masks, New Guinea and New Britain	10	.20
24. Prepared Human Heads, New Guinea and New Hebrides	8	.15
25. Alabaster Jars, Egypt	12	.25
26. Bronzes and Ivory Carvings, Benin, West Africa	12	.25
27. Medicine-man, Wooden Masks, etc., Cameroon	8	.15
28. Bronzes: Races of Mankind	30	.50
29. Man of the Stone Age	10	.20
30. African Races: Sculptures in Hall 3	18	.35
31. American Races: Sculptures in Hall 3	12	.25
32. Asiatic Races: Sculptures in Hall 3	30	.50
33. European Races: Sculptures in Hall 3	10	.20
34. Oceanic and Australian Races: Sculptures in Hall 3	16	.30
35. Bronzes: Races of Mankind (comprehensive set)	80	1.50

#### BOTANY

1. Miscellaneous Plants	12	.25
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#### GEOLOGY

1. Restorations of Ancient Landscapes, Plants and Animals	14	.30
2. Neanderthal (Mousterian) Man	10	.20
3. The Mesohippus, a Three-toed Horse	6	.10

#### ZOOLOGY

1. Apes and Monkeys	12	.25
2. Interesting Large Rodents	7	.15
3. Marsupials, or Pouched Mammals	8	.15
4. Tarantulas, Centipedes and Scorpions	10	.20
5. Skates and Rays of American Waters	10	.20
6. Common American Moths	10	.20
7. Common Illinois Butterflies	20	.40
8. North American Mammals: Habitat Groups	18	.35
9. African Game Animals	19	.35
10. British Champion Animals: Sculptures in Hall 12	20	.40

#### N. W. HARRIS PUBLIC SCHOOL EXTENSION

1. Types of cases loaned to Chicago schools	7	.15
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*Post card sets on other subjects will be added from time to time.*

## OTHER POST CARDS AND PICTURES

Post cards of miscellaneous subjects selected from among the Museum exhibits are on sale at the north or main entrance at the rate of two for 5 cents in black and white; 5 cents each in colors.

Antiquities of ancient Ireland—ten plates, 6"x9". 5 cents.

Abyssinian Birds and Mammals, from paintings by Louis Agassiz Fuertes. 32 lithographic reproductions, 10" x 12", of birds and mammals, packed in carton. \$3. In de luxe cover \$5.

Photographs of most of the outstanding exhibits are on sale. These are available at \$1 per print when sold for personal use only; when purchaser intends using them for publication or reproduction in any form the price is \$2 per print. Some are copyrighted. Permission to reproduce photographs must be obtained from the Director of the Museum, and is granted only on condition that courtesy lines giving credit to Field Museum of Natural History shall appear with the reproductions, and upon compliance with other requirements the Museum may make.

All of the post cards, pictures, albums, etc., may be obtained at the information desk at the main or north entrance of the Museum, or may be ordered by mail.

### LIST AND PRICES OF ILLUSTRATED LEAFLETS ISSUED BY FIELD MUSEUM

#### ANTHROPOLOGY

1—Chinese Gateway. By Berthold Laufer. 8 pages, 1 plate. February, 1922. ( <i>Supply exhausted.</i> )	\$ —
2—Philippine Forge Group. By F. C. Cole. 4 pages, 1 plate. February, 1922.	.10
3—Japanese Collections. By Helen C. Gunsaulus. 20 pages, 6 plates. April, 1922.	.20
4—New Guinea Masks. By A. B. Lewis. 12 pages, 6 plates. June, 1922.	.15
5—The Thunder Ceremony of the Pawnee. By Ralph Linton. 20 pages, 4 plates. October, 1922.	.20
6—The Sacrifice to the Morning Star. By Ralph Linton. 20 pages, 1 plate. November, 1922.	.10
7—Purification of the Sacred Bundles. By Ralph Linton. 11 pages, 1 plate. April, 1923.	.10
8—Annual Ceremony of the Pawnee Medicine Men. By Ralph Linton. 20 pages, 2 plates. April, 1923.	.10
9—The Use of Sago in New Guinea. By A. B. Lewis. 9 pages, 2 plates, 3 text-figures. July, 1923.	.10
10—Use of Human Skulls and Bones in Tibet. By Berthold Laufer. 16 pages, 1 plate. July, 1923.	.10
11—The Japanese New Year's Festival, Games, and Pastimes. By Helen C. Gunsaulus. 18 pages, 4 plates. July, 1923.	.15
12—Japanese Costume. By Helen C. Gunsaulus. 26 pages, 4 plates. December, 1923.	.20
13—Gods and Heroes of Japan. By Helen C. Gunsaulus. 24 pages, 4 plates. May, 1924.	.15

14—Japanese Temples and Houses. By Helen C. Gunsaulus. 20 pages, 4 plates. May, 1924.	\$ .15
15—Use of Tobacco among North American Indians. By Ralph Linton. 27 pages, 6 plates. December, 1924.	.20
16—Use of Tobacco in Mexico and South America. By J. Alden Mason. 15 pages, 6 plates, 1 text-figure. Janu- ary, 1925.	.15
17—Use of Tobacco in New Guinea and Neighboring Regions. By Albert B. Lewis. 10 pages, 2 plates, 1 text-figure. January, 1925.	.10
18—Tobacco and Its Use in Asia. By Berthold Laufer. 39 pages, 10 plates. January, 1925.	.25
19—Introduction of Tobacco into Europe. By Berthold Laufer. 66 pages. January, 1925.	.25
20—The Japanese Sword and Its Decoration. By Helen C. Gunsaulus. 21 pages, 4 plates. January, 1925.	.15
21—Ivory in China. By Berthold Laufer. 78 pages, 10 plates, 15 text-figures. August, 1925.	.60
22—Insect Musicians and Cricket Champions of China. By Berthold Laufer. 28 pages, 12 plates, 1 cover design. July, 1927.	.40
23—Ostrich Egg-shell Cups of Mesopotamia and the Ostrich in Ancient and Modern Times. By Berthold Laufer. 52 pages, 9 plates, 10 text-figures, 1 cover design. April, 1926.	.30
24—Indian Tribes of the Chicago Region, with special refer- ence to the Illinois and the Potawatomi. (Second Edition.) By William D. Strong. 36 pages, 8 plates. August, 1938.	.25
25—The Civilization of the Mayas (Third Edition). By J. Eric Thompson. 104 pages, 14 plates, 11 text-figures, 1 map, 1 cover design. June, 1936.	.60
26—The Early History of Man. By Henry Field. 18 pages, 8 plates, 1 map, 1 cover design. June, 1927. ( <i>Supply exhausted.</i> )	—
27—The Giraffe in History and Art. By Berthold Laufer. 100 pages, 9 plates, 1 vignette, 23 text-figures, 1 cover design. March, 1928.	.60
28—The Field Museum-Oxford University Expedition to Kish, Mesopotamia, 1923–1929. By Henry Field. 34 pages, 14 plates, 2 maps. December, 1929.	.50
29—Tobacco and Its Use in Africa. By Berthold Laufer, Wilfrid D. Hambly, and Ralph Linton. 45 pages, 6 plates. January, 1930.	.25
30—The Races of Mankind (Third Edition). By Henry Field, with a preface by Berthold Laufer and an introduction by Sir Arthur Keith. 44 pages, 9 plates. September, 1937.	.25
31—Prehistoric Man. Hall of the Stone Age of the Old World. (Second Edition.) By Henry Field, with a foreword by Berthold Laufer. 44 pages, 8 plates, 1 map, 1 cover illustration. September, 1937.	.25

- 32—Primitive Hunters of Australia. By Wilfrid D. Hambly. 60 pages, 12 plates, 1 map. February, 1936. \$ .30
- 33—Archaeology of South America. By J. Eric Thompson. 160 pages, 12 plates, 18 text-figures, 1 map. July, 1936. .75
- 34—Ancient Seals of the Near East. By Richard A. Martin. 46 pages, 24 text-figures. June, 1940. .25

#### BOTANY

- 1—Figs. By B. E. Dahlgren. 8 pages, 1 plate. February, 1922. .10
- 2—Coco Palm. By B. E. Dahlgren. 8 pages, 2 plates. February, 1922. .10
- 3—Wheat. By B. E. Dahlgren. 8 pages, 1 plate. February, 1922. .10
- 4—Cacao. By B. E. Dahlgren. 14 pages, 2 plates, 3 text-figures. November, 1922. .10
- 5—A Fossil Flower. By B. E. Dahlgren. 16 pages, 10 text-figures. April, 1924. .10
- 6—The Cannon-ball Tree. By B. E. Dahlgren. 8 pages, 6 plates, 1 cover design. February, 1925. .10
- 7—Spring Wild Flowers. By J. Francis Macbride. 32 pages, 2 plates, 28 text-figures, 1 cover design. May, 1924. .25
- 8—Spring and Early Summer Wild Flowers. By J. Francis Macbride. 30 pages, 2 plates, 28 text-figures, 1 cover design. June, 1924. .25
- 9—Summer Wild Flowers. By J. Francis Macbride. 30 pages, 1 color plate, 2 plates, 28 text-figures, 1 cover design. June, 1924. .25
- 10—Autumn Flowers and Fruits. By J. Francis Macbride. 30 pages, 1 color plate, 2 plates, 28 text-figures, 1 cover design. October, 1924. .25
- 11—Common Trees. By J. Francis Macbride. 44 pages, 2 plates, 43 text-figures, 1 cover design. February, 1936. .25
- 12—Poison Ivy. By James B. McNair. 12 pages, 6 text-figures, 1 cover design. April, 1926. .15
- 13—Sugar and Sugar-making. By James B. McNair. 34 pages, 8 text-figures, 1 cover design. October, 1927. .25
- 14—Indian Corn. By James B. McNair. 34 pages, 6 text-figures, 1 cover design. February, 1930. .25
- 15—Spices and Condiments. (Second Edition.) By James B. McNair. 64 pages, 11 text-figures, 1 cover design. June, 1937. .25
- 16—Fifty Common Plant Galls of the Chicago Area. By Carl F. Gronemann. 30 pages, 1 colored cover design, 51 text-figures. September, 1930. .25
- 17—Common Weeds. By Paul C. Standley. 32 pages, 27 text-figures, 1 cover design. September, 1934. .25
- 18—Common Mushrooms. By Leon L. Pray. 68 pages, 66 text-figures, 1 cover design. July, 1936. .50
- 19—Old-Fashioned Garden Flowers. By Donald Culross Peattie. 32 pages, 28 text-figures, 1 cover design. November, 1936. .25

20—House Plants. By Robert Van Tress. 36 pages, 31 text-figures, 1 cover design. April, 1937.	\$ .35
21—Tea. By Llewelyn Williams. 30 pages, 9 text-figures, 1 cover design. July, 1937.	.25
22—Coffee. By B. E. Dahlgren. 44 pages, 14 plates, 1 text-figure, 1 cover design. May 25, 1938.	.25
23—Carnivorous Plants and "The Man-Eating Tree." By Sophia Prior. 20 pages, 8 text-figures, 1 cover design. February, 1939.	.25
24—Mistletoe and Holly. By Sophia Prior. 32 pages, 8 text-figures, 1 cover design. December, 1939.	.25
25—The Story of Food Plants. By B. E. Dahlgren. 38 pages including 17 plates and one colored plate. September, 1940.	.25

#### GEOLOGY

1—Arizona Gold Mine. By H. W. Nichols. 12 pages, 1 plate. May, 1922.	.10
2—Models of Blast Furnaces for Smelting Iron. By H. W. Nichols. 12 pages, 3 plates. November, 1922.	.10
3—Amber. By O. C. Farrington. 7 pages, 3 colored plates, 1 text-figure. July, 1920.	.10
4—Meteorites. By O. C. Farrington. 11 pages, 4 plates. September, 1923.	.10
5—Soils. By H. W. Nichols. 13 pages, 6 plates. April, 1925.	.10
6—The Moon. By O. C. Farrington. 13 pages, 2 plates. October, 1925.	.10
7—Early Geological History of Chicago. By H. W. Nichols. 30 pages, 4 plates, 6 colored plates, 9 text-figures. September, 1925.	.25
8—Agate—Physical Properties and Origin. By O. C. Farrington. Archaeology and Folk-lore. By Berthold Laufer. 36 pages, 10 plates, 4 colored plates, 1 colored text-figure. July, 1927.	.50
9—How Old Are Fossils? By Sharat K. Roy. 12 pages, 4 plates. June, 1927	.15
10—Famous Diamonds. By O. C. Farrington. 28 pages, 5 plates. February, 1929.	.25
11—Neanderthal (Mousterian) Man. By O. C. Farrington and Henry Field. 16 pages, 8 plates, 1 map. October, 1929.	.15
12—Cement. By H. W. Nichols. 16 pages, 4 plates. October, 1929.	.15
13—The Geological History and Evolution of the Horse. By Elmer S. Riggs. 54 pages, 19 plates, 4 text-figures, 1 cover illustration. November, 1932.	.40
14—A Forest of the Coal Age. By B. E. Dahlgren. 40 pages, 2 plates, 24 text-figures, 1 cover design. October, 1933.	.25

#### ZOOLOGY

1—White-tailed Deer. By Wilfred H. Osgood. 12 pages, 1 plate, 1 text-figure. April, 1922.	.10
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2—Chicago Winter Birds. By Colin C. Sanborn. 12 pages, 1 plate. November, 1922.	\$ .10
3—The American Alligator. By Karl P. Schmidt. 16 pages, 2 plates, 3 text-figures. January, 1923.	.10
4—The Periodical Cicada. By William J. Gerhard. 14 pages, 2 plates, 2 text-figures. March, 1923.	.10
5—The Alligator Gar. By Alfred C. Weed. 16 pages, 1 plate, 2 text-figures. April, 1923.	.10
6—The Wild Turkey. By John T. Zimmer. 15 pages, 1 plate, 1 cover illustration. March, 1924.	.10
7—The Man-Eating Lions of Tsavo. By Lieutenant-Colonel J. H. Patterson, D.S.O. 40 pages, 4 plates, 1 map, 1 cover illustration. October, 1925.	.50
8—Mammals of the Chicago Area. By Colin C. Sanborn. 24 pages, 3 plates, 19 text-figures, 1 cover illustration. January, 1926.	.20
9—Pike, Pickerel and Muskalonge. By Alfred C. Weed. 52 pages, 8 colored plates, 4 text-figures, 1 cover design. June, 1927.	.50
10—The Truth about Snake Stories. By Karl P. Schmidt. 20 pages, 1 cover illustration. January, 1929.	.15
11—The Frogs and Toads of the Chicago Area. By Karl P. Schmidt. 16 pages, 4 plates, 1 colored plate, 1 cover illustration. February, 1929.	.25
12—The Salamanders of the Chicago Area. By Karl P. Schmidt. 16 pages, 3 plates, 1 colored plate, 1 cover illustration. October, 1930.	.25
13—Sculptures by Herbert Haseltine of Champion Domestic Animals of Great Britain. 6 pages of text, 19 plates (with captions opposite). June, 1934.	.25
14—Turtles of the Chicago Area. By Karl P. Schmidt. 24 pages, 2 colored plates, 10 text-figures, 1 cover illustration.	.25

#### SPECIAL LEAFLET

1—Lion Spearing. By Carl E. Akeley. 7 pages, 3 plates. September, 1926.	.15
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#### GUIDE

General Guide to Field Museum of Natural History Exhibits. Twenty-first edition. 1941, 56 pages. 9 text-figures.	.15
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#### HANDBOOKS

Oriental Theatricals. By Berthold Laufer. 1923. 60 pages, 11 plates.	.25
Archaeology of North America. By Paul S. Martin. June 15, 1933. 122 pages, 8 plates, 10 text-figures, 1 map. ( <i>Supply exhausted.</i> )	—
Ethnology of Africa. By Wilfrid D. Hambly. January 28, 1930. 226 pages, 42 plates, 4 maps.	1.50
Ethnology of Melanesia. By Albert B. Lewis. February 1, 1932. 210 pages, 64 plates, 2 maps.	1.75

Ethnology of Polynesia and Micronesia. By Ralph Linton. December 31, 1926. 192 pages, 14 plates, 59 text- figures, 1 map.	\$ .35
North American Trees. By Samuel J. Record. September 6, 1934. 120 pages, 84 text-figures.	.50
Flora of the Indiana Dunes. By Donald C. Peattie. May, 1930. 432 pages, 38 text-figures, 1 map.	2.00

#### DESIGN SERIES

1—Block Prints from India for Textiles. By A. B. Lewis. 24 plates, 2 of which are in colors, 2 text-figures. Feb- ruary, 1924.	.50
2—Javanese Batik Designs from Metal Stamps. By A. B. Lewis. 24 plates, 2 of which are in colors, 2 text-figures. September, 1924.	.50
3—Chinese Baskets. By Berthold Laufer. 38 plates and preface of 2 pages, in carton. December, 1925.	1.25
4—Decorative Art of New Guinea. By A. B. Lewis. 52 plates, preface of 2 pages, 2 text-figures. April, 1926.	.75
5—Carved and Painted Designs from New Guinea. By A. B. Lewis. 52 plates, preface of 3 pages. January, 1931.	1.25









